States of Emergency

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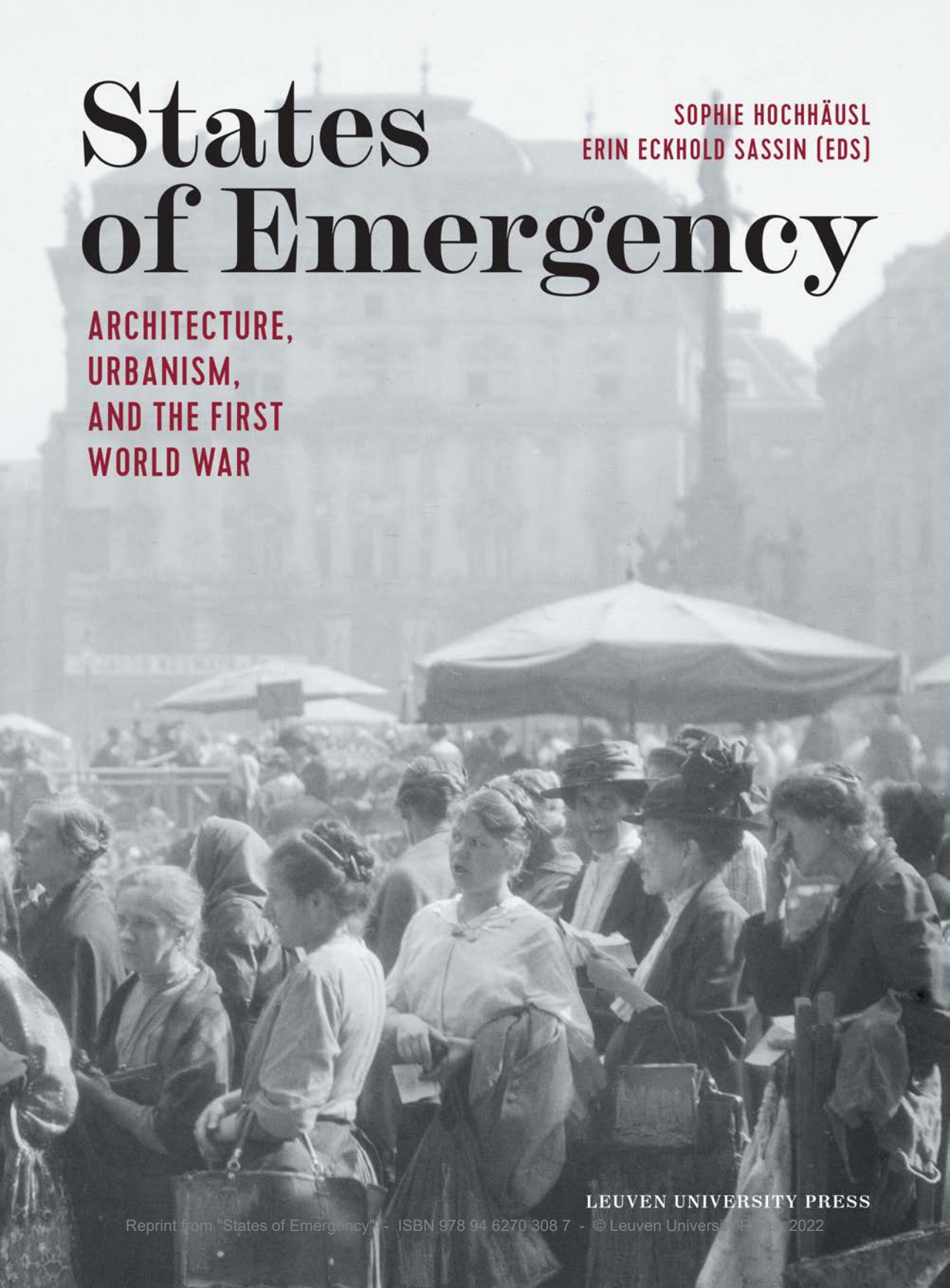
ARCHITECTURE, URBANISM, AND THE FIRST WORLD WAR



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Architecture, Urbanism, and the First World War

Edited by

Erin Eckhold Sassin and Sophie Hochhäusl

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Figure 2.1: Prisoners of war in a street in the destructed municipality of Crossen. © Bundesarchiv, 183-R31894.

Lessons of War

Architecture of the East Prussian Reconstruction Effort, 1914–1925

Deborah Ascher Barnstone

> "The visible expressions of culture are the products of art; architecture was, and will be again, the 'mother of the arts.' A strong and purposeful architecture is therefore a major requirement for uplifting and strengthening the culture of the East."[1]
>
> Building Arts Chamber of the East, 1918/1919.[2]

The sudden need to reconstruct large areas of East Prussia early in the First World War led the German military to develop several innovative approaches to architectural design, construction systems, and labor organization that had profound consequences for both wartime and interwar housing production.[3] As the citation from the Building Arts Chamber of the East above makes clear, at the end of the war, architecture was considered the penultimate art form and the salve that could repair physical, spiritual, and cultural wounds suffered during the conflict. Thus, any innovations from wartime architectural efforts were welcomed. Innovations developed in two ways: through federal policy dictated from Berlin and through experience in the military reconstruction effort.

The prosecution of the war took a particularly heavy toll in Germany's easternmost province, East Prussia, where Russian forces mounted an early two-pronged assault in August 1914. East Prussia comprised territory on the easternmost edges of Germany that was bordered by the Baltic Sea to the north and the Russian Empire to the east and south, making it vulnerable to Russian invasion. (Today, it is part of Poland.) The Russians sent the First Army against the well-fortified city of Königsberg in the northeast, and the Second Army around the Masurian Lakes farther south to advance on East Prussia from the south in order to trap Germany's Eighth Army near Allenstein.[4] Although the Russians inflicted considerable casualties on German

forces, they were plagued by poor communications, lack of modern equipment – especially aerial reconnaissance capabilities – and an uneducated and unprepared soldiery.[5] Russia appeared to be winning at the beginning of the attack on August 20 and 21, but by the 29th its armies were in disarray. Over 50,000 troops were killed and over 90,000 were captured by the Germans. The unexpected necessity to house so many prisoners-of-war was one catalyst for establishing a special military unit, the Militärbau Kommando (military construction commando), tasked with construction and reconstruction.

As the Russian army retreated from the initial skirmishes, its soldiers brutally destroyed everything in their path – whole villages, farms, and industrial installations.[6] The scale of destruction increased exponentially over the coming years of battle as this was only the first of several incursions made by Russian troops in 1914 and 1915. According to official Prussian tallies, in and around East Prussia over 10,000 structures were either damaged or destroyed during this period. By 1916 official Prussian figures record 41,414 structures completely razed or in severe disrepair and another 60,000 with serious damage.[7] Similar records show that Gumbinnen County suffered the loss of about one-fifth of its entire building stock.[8] Eye-witness accounts describe malicious acts of vandalism as the Russians retreated: "furniture and household appliances smashed, the linen ripped apart, all cupboards emptied, the beds chopped up and the down scattered, letters and other papers thrown about, walls damaged by shots fired in fun, windows and doors smashed, merchandise pointlessly wasted, and the rooms fouled with human excrement."[9] Not only did this wholesale damage render enormous parts of the built environment useless but the Russian soldiers' actions displaced hundreds of thousands of German citizens in the first months of the war alone; contemporary reports place the numbers at about one-sixth of the total provincial population, which would have been over 300,000 people.[10] Although these citizens were forced to flee their homes ahead of advancing Russian troops, and were faced with likely further hostilities to come, the government expected them to remain homeless, without regular employment, and dependent on state aid for the foreseeable future (as long as the war continued).[11] The needs to house displaced citizens and reconstruct the physical infrastructure in order to facilitate the war effort were therefore the other catalysts for creating the Militärbau Kommando. The Kommando was a totally new military entity with no historic precedent and therefore had to imagine whole systems and structures to support its work. Its innovations included the formation of construction teams that integrated skilled, experienced workers with neophytes; inventive use of materials to hand; the pragmatic combination of traditional aesthetics with modern materials and construction systems; and the early adoption of what later, in the interwar period, was called functionalism, the practical design response to design challenges.

The Militärbau Kommando and the Kruchen Labor Organization System

On August 27, 1914, while the Battle of Tannenberg was still underway, Kaiser Wilhelm II ordered the implementation of every possible means with which to "alleviate the emergency" in East Prussia.[12] By mid-September 1914, the federal government had founded the Kriegshilfekommission (War Aid Commission) on the civilian side with an initial budget of 400 million marks and the German military had established the Militärbau Kommando, under the authority of the Berlin architect Paul Kruchen as battalion commander, to mount a coordinated reconstruction effort. The Militärbau Kommando's headquarters were situated in Stallupönen, site of some of the worst fighting and physical destruction in 1914 and 1915.[13] The first cities targeted for reconstruction included Stallupönen and neighboring Pillkallen, Gumbinnen, Eydtkuhnen and Goldap, all located in the northeast corner of East Prussia where the Russian First Army had penetrated. Later, the Kommando worked in Crossen, Gruben and Insterburg. The Kommando's primary aims were two-fold: to replace civilian infrastructure that had been destroyed during the conflict and to build prisoner-of-war camps to house the nearly 100,000 prisoners-of-war in German captivity.[14]

Kruchen shrewdly calculated the benefits of a well-conceived reconstruction effort: reinstatement of necessary German infrastructure including roads, bridges and railways, provision of employment to locals left economically devastated by the conflict, and capitalization on the potential inherent in a prisoner-of-war labor force.[15] Germany suffered a severe labor shortage soon after the start of the war that became more acute with every passing month.[16] Over 13 million Germans mobilized during the prosecution of the war, a figure that represented almost every man of conscript age. Therefore, very quickly, Germany experienced grave labor shortages in industry, agriculture, and mining but also reconstruction. One solution was to forcibly draft prisoners-of-war into these occupations. Kruchen's approach was far more ingenious; he created a jobs training program, with minimal pay and other incentives, for both German citizens and the prisoners-of-war, from which they could gain marketable skills that they could use after the war was over. (Even early on, it was clear that construction skills were going to be in high demand once the war ended.) Kruchen was equally cognizant of the challenges involved in combining local German workers with prisoners-of-war on construction teams; he therefore made his incentive system two-tiered, with lower pay for prisoners and slightly higher, better pay for German citizens (both soldiers and civilians). Kruchen recognized that simply using prisoners-of-war as forced laborers would result in poor-quality work since it is difficult to coerce people into doing good work when they do not want to. He worried that the product of forced labor would be poor quality – any construction projects completed under duress would need to be replaced after the war. If prisoners-of-war were provided proper incentives, however, they would perform well because they

would work willingly. He also reasoned that such a benevolent program might turn former enemies into future friends.[17]

Kruchen's system was a coordinated effort between the military and civilian associations active in East Prussia, including the national Deutsche Werkbund, Architektenbund (Architects' Association), and Bund für Heimatschutz (Association for the Preservation of the Homeland), and regional groups like Verband Ostdeutscher Industrieller (Association of East German Industrialists) in Danzig, Königliche Eisenbahndirektion (Royal Railroad Directorate) in Königsberg, and the office of the Oberpräsident Ost Preußen (President of East Prussia). Kruchen strove to integrate local handworkers and craftsmen, wherever available, with soldiers and prisoners in the reconstruction effort, whose watchword was "Civilian Capability with Military Organization."[18] The model that he developed for project delivery was small construction teams that blended experienced craftsmen, preferably local ones, with neophytes in a way that maximized labor potential. By using experienced and novice workmen together, the teams functioned both for training and construction, which made them efficient and effective.

There were challenges to collaborating with the local civilians, partly real and partly the result of prejudices common to Germans from the west of the country. German architect Hans Scharoun, who worked with Kruchen in the Militärbau Kommando, writes, "In the East-Prussian population, an individualistic, crassest form is found, which tends towards the form of egoism, and in its independence, goes so far that, for its own sake, it rejects forms of business that would bring it a financial advantage."[19] In other words, East Germans were seen as being stubborn and difficult to work with, and for cutting off their noses to spite their faces. Scharoun's opinion of the local workforce echoes other contemporary assessments of Germans in East Prussia and Silesia; the eastern provinces were largely rural and backward in comparison with other parts of Germany.[20]

Kruchen created teams that typically had between 16 and 22 people slated for work either outdoors or in workshops.[21] The typical team consisted of two German security guards who were skilled workers supervising 20 unskilled prisoners-of-war. The size of the teams varied depending on the kind of work they were engaged in: masonry and carpentry teams usually had between two and four expert craftsmen together with 12 prisoners-of-war, while teams working outside on infrastructure like roads and bridges tended to be the larger 22- to 24-member ones. The prisoners-of-war were occupied in an impressive range of construction-related tasks, including masonry and carpentry, painting, glazing, plastering, and acting as locksmiths, furniture designers, and furniture makers. Kruchen writes in 1915: "The whole [w]as a basis for the later to be formed cooperatives … [T]he advantage of this device: faster, better, cheaper and more beautiful" construction work.[22]

In another clever organizational decision for his model, Kruchen divided reconstruction expenses between the military and civilian authorities so that the military did not have to shoulder the full burden of the costs but also to encourage local and regional participation in his system. Local and regional support was not only financial, it was also material – some of the operating costs were defrayed by local communities: "for standard accommodation, food, clothing and health requirements, the local county councils (or other interest groups as well as municipalities) have to pay."[23] Localities also contributed second-hand clothing and food.

Within the larger system, Kruchen developed two different models for housing construction teams, depending on where they were employed: a decentralized and a centralized one. Teams working outdoors in the country on large-scale infrastructure projects were scattered and boarded locally in small accommodation. In contrast, those employed in the cities in production workshops or on urban reconstruction projects where large numbers of soldiers and prisoners were occupied were housed together, usually in close proximity to the production workshops.[24]

According to records in the archives, despite initial skepticism on the part of both military and civilian groups, Kruchen's system worked well for the first couple of years. But as the war progressed, there were fewer and fewer civilians available because more citizens had been conscripted into the German army.[25] The dearth of available civilian workers in 1917 and 1918 meant that reconstruction slowed, demand for the limited resources grew, and the composition of the teams had to change.[26] In turn, this forced the Kommando to develop priorities for its work rather than tackle all the different tasks at once. Priority was given first to rebuilding local and regional infrastructure, since these were critical to the war effort. Of secondary importance were buildings that had economic value or that housed functions that supported the war effort in some way, such as factory buildings. Tertiary importance was given to producing ersatz foods to replace lost crops or crops that were impossible to raise during the conflict, as well as ersatz industrial products. "After all, it was first and foremost necessary to support the war that had become an economic war … and above all, to provide for the accommodation of the harvest, the vineyard, and last but not least, the inhabitants in the destroyed area. As a result of the practical and organized establishment, new barns, stables, dairies and schools were built in the shortest possible time and damaged areas were repaired. In addition to ensuring food for the populace, care was also taken to find a substitute for the grain crops … needed for human consumption … In the district of Insterburg, two fat extraction plants were completed, and in the district of Ragnit, a sulfite alcohol factory set up by the Zollstofffabrik."[27] Thus, from the start, the Kommando's strategic value was both military and economic.

Functional Design: Site Strategies, Architectural Form, Innovative Materials, and Construction Methods

The architectural projects that Kruchen's teams worked on ranged in scale and type from relatively small buildings like barracks for prisoners-of-war to large-scale storage depots and industrial installations. The teams of prisoners-of-war built entire prisoner-of-war camps like the ones at Crossen and Gumbinnen, with numerous buildings of many different kinds arranged on a large block of land, as well as single building projects like the 8,000-square-meter provision depot at Frankfurt an der Oder.[28] Each program, coupled with the exigencies of war, demanded a very different approach to building siting, materials, structural systems and spatial organization [fig. 2.1].

The prisoner-of-war camps were arguably the most complex design and construction challenges facing Kruchen's teams because of their sheer scale and variety of building types. They were also the only buildings that the Kommando designed and built from scratch; other buildings were reconstruction projects. The camps usually had to house about 10,000 prisoners-of-war together with 1,000 German soldiers. The camp was a new architectural model, for which there was little, if any, architectural precedent. Instead, Kruchen and his team had programmatic requirements and functional considerations to guide them, along with the rules for prosecution of war outlined in the 1907 Geneva Convention for the Amelioration of the Condition of the Wounded and Sick in Armies in the Field, 11 L.N.T.S. 440, and the 1907 Hague Conventions on Land Warfare.[29] The Geneva Convention outlined humanitarian treatment of prisoners-of-war, whether wounded, sick, or healthy, but did not give any architectural advice as to how to interpret its requirements in built form.[30]

In order to devise an appropriate site layout for the camps, Kruchen's team carefully considered the essentials necessary to a well-functioning camp. Aesthetics had virtually no role to play in these projects because of what the program involved and the limited resources available. The programmatic issues they had to consider were complex. The site layout needed to accommodate both Russian prisoners and German soldiers together yet separately, with adequate provision for surveillance and safety for both groups. The ratio of German soldiers to Russian prisoners was roughly 1:10 early in the war, but worse as the number of prisoners-of-war grew, which meant that building siting had to facilitate surveillance while offering physical protection to the outnumbered German soldiers. Epidemics were rife amongst the prisoners, so the barracks needed to be arranged in a way that would allow for quarantine and care of sick prisoners while keeping them under watch.

Kruchen's team also likely studied the layouts used at other camps around Germany. The one in Meschede typified one common approach to the problem: a surviving contemporary postcard shows rows of cookie-cutter, one-story box structures, two deep, laid out on an orthogonal grid, with a series of unique buildings at one end. While this arrangement is certainly straightforward, and its repetitive strategy would have made construction easy, surveillance is not optimized. The site plan also leaves little space for prisoners to exercise. Kruchen's solutions were more thoroughly considered and therefore even more practical and functional. As at Meschede, his team used repeated building types to maximize efficiency but in place of the Meschede layout they used a modified fan-shaped plan, one far better suited to surveillance.[31]

Merzdorf near Cottbus was a typical camp; it was a series of buildings and courtyards arranged to satisfy requirements for surveillance, security, privacy, exercise, and quarantine of whole companies of captive Russian soldiers.[32] The result was a blueprint for many projects to come.[33] Kruchen used the ancient form of a Greek amphitheater, with its central, half-round stage flanked by seats arranged in outwardly radiating, concentric semi-circles, as inspiration for the site plan, since the form, like Jeremy Bentham's Panopticon, allows for easy observation of every space on the concentric rings from a central point. The core of the fan-shape was a repeated unit made up of public outdoor space, around which were situated six small-sized barracks that served 250 prisoners in total. Five of these barracks could house up to 50 prisoners each, with the sixth reserved for those who were ill; they were served by Russian military medical personnel, usually ones who had been attached to the company. This was one of the provisions of the 1907 Geneva Convention. The central public space was divided into three courtyards – one for quarantined soldiers, one for individuals and another for groups. Five of these six-barrack arrangements, a number that could hold exactly one Russian company, were organized around a larger courtyard. This arrangement, in turn, was repeated again and again in the semi-circular fan until there were enough barracks to house the entire division. The units all had rear gardens that the prisoners could tend. The gardens backed onto a neutral zone that offered security separation. The entire ensemble was ringed with elevated watch towers, often octagonal or round in plan, that afforded clear 360-degree views of the camp and its surroundings[34] [fig. 2.2].

A five-story watch tower, which doubled as a water tower, sat at the heart of the architectural ensemble. Fortified by an earthen rampart, the tower was a multi-story wooden structure whose upper story was an open observation deck fitted out with a machine gun. The middle stories housed the camp water storage, an officers' room below, and an artillerymen's room on the ground floor. The basement contained the kitchen, store rooms, and dining room for the camp [fig. 2.3].

Figure 2.2: One of the prisoner-of-war camps in Crossen constructed using the Kruchen System. © Bundesarchiv R 67 Bild-02-002.

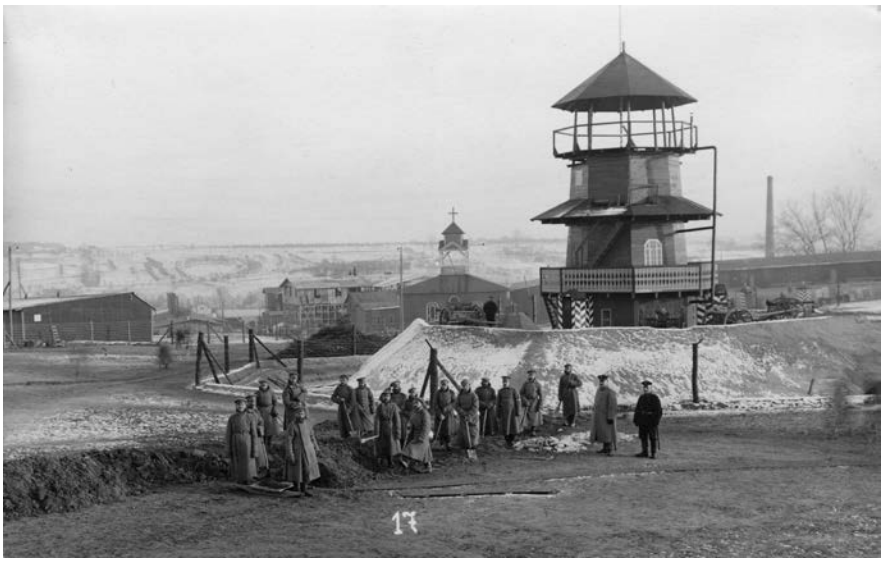

Figure 2.3: The hexagonal watchtower at Crossen. © Bundesarchiv, R 67 Bild-02-003.

The actual buildings were designed to be as easy to erect and as functional as possible. The barracks were simple, long, rectangular boxes with low-slung, pitched roofs. Orthogonal forms are the easiest to build because they do not require complicated joinery. The form is also well suited to holding rows of bunkbeds arranged side-by-side. Windows were placed in the roof so that they did not block placement of the bunks. The pitched roof shed snow reasonably well, a necessity in the East Prussian winter at that time.

Because of material shortages throughout Germany and disruptions to the rail system, which made transport cross-country difficult, Kruchen's designers were forced to use whatever was to hand. The shortages were a result of two interrelated factors: the blockade conducted by the Allied Powers that only intensified as the war continued, and the requisitioning of raw material and manufacturing capacity to the war economy. The result was a dramatic drop in raw material imports to Germany with concomitant scarcities in every industry.[35] Materials used in munitions manufacture, for instance, such as steel, were almost impossible to come by.[36] As Johann Hermann Wilke, who wrote about the reconstruction effort in East Prussia, lamented, "There are neither wall stones nor masons, the war ruined the brickyards, destroyed the building materials, and killed or wounded the craftsmen."[37] More often than not, as at Merzdorf, the material of choice was a combination of mud and wood, materials easily sourced in the area.[38] Teams of prisoners obtained wood in the extensive East Prussian forests, where native species include oak, pine, birch, ash, and Douglas fir, all good for building construction.[39] Kruchen's teams then processed and milled the lumber for use as structural members and cladding. The barracks at Merzdorf were log cabins made of pine roundwood from the surrounding area, felled and stripped of bark but not squared, then sealed with mud slurry.[40] This was an efficient way to build since the wood was not fully milled, making the preparation process less labor intensive and faster.

Roofs and interior walls were finished with boards covered with tar paper. Scharoun writes, "You almost feel like you have travelled back in time when, from buildings towering above, you see the strange little thing close to the earth. Especially with a peek into the hut-like interiors that the dwellers have decorated with many kinds of childlike carvings," made by the prisoners to domesticate the otherwise simple structures.[41] Scharoun also describes the different colors used at the camp to enliven the visual aspect.

In one report on the camp designs, Scharoun acknowledges the difficulty of speaking about aesthetics given the pragmatic nature of the camp architecture. However, he does feel that the urban design solution that Kruchen developed merits recognition as an elegant functional response to the program.[42]

Transition to Peacetime

When the war ended, there was some discussion about using the Militärbau Kommando, already renamed the Bau Kommando (Building Battalion), as a peacetime institution in order to make a seamless transition from wartime to peacetime reconstruction.[43] This idea made sense since it would take advantage of the well-organized and functional Kruchen System with its local labor force and connections to the East Prussian building bureaucracy, functioning workshops, and the immense experience its architects had gained during the war in such areas as functional building design and efficient delivery. The hope was also to transfer the administrative and planning operations developed by the Kommando to civilian institutions. Equally advantageous, new institutions founded by the federal government in 1914 to support the financial and logistical sides of the reconstruction effort were well integrated into Kruchen's system. Along with those organizations named above were the Kriegshilfekasse für Ostpreussen (War Aid Fund for East Prussia), which provided easy credit for building, and the Vermittlungsstelle für Aufträge aller Art (Exchange Office for Orders of all Kinds), which supported local craftsmen.[44]

Although the Bau Kommando never eventuated, architects who had been in the Militärbau Kommando, like Kruchen and Scharoun, did accept civilian appointments in East Prussia after the armistice, which helped smooth the transition from military to civilian order. Scharoun became director of the Bauberatungsamt (Construction Consulting Authority) Insterburg, and a member of the Baukunstkammer des Ostens (Eastern Chamber of Architects). In 1919, he also took over the office in Insterburg that had served as headquarters for the Militärbau Kommando, running it as a private architectural practice and, as an independent architect, he was employed by the Allgemeine Wohnungsbaugenossenschaft Insterburg (Insterburg General Housing Cooperative) between 1920 and 1924.[45]

The suggestion to repurpose the Militärbau Kommando took into account the lack of available local talent, the scope of destruction that far outstripped the experience of most civil construction or engineering companies, and the small number of entrepreneurial firms in East Prussia.[46] In addition, the sheer magnitude of the work required put economic pressures on local government that was beyond their capacity. The federal government hoped that the new Bau Kommando could help bridge the local challenges and that it would succeed since its officers were already well known in East Prussian architectural and construction circles so would not be perceived as total outsiders and interlopers.

The idea was to divide the Bau Kommando into two: an office for reconstruction and another for construction. However, it seems that the plan never materialized and the formal structures of the proposed Bau Kommando were dissolved by April 1919.[47] Most likely, this occurred as other new housing construction programs were legislated

by the Weimar government, especially the establishment of housing agencies, and thinking about the best ways to reconstruct evolved. Beyond the transformation of the former Kommando office headquarters into a private practice under Scharoun's direction, it is clear from archival material and the few surviving buildings that accumulated wartime experience was influential in other ways.[48] During the period from 1919–1925, Scharoun executed more than twenty-five building designs in and around Insterburg for the Allgemeine Wohnungsbaugenossenschaft Insterburg, which included large-scale housing developments, villas, estates, settlements and building conversions.[49] One surviving project by Scharoun, Bunte Reihe (Colored Row) in Kamswyk, Insterburg, shows the lessons learnt during the war: economy of scale, functional planning, simple ways to embellish plain design, use of readily available materials and construction systems that even lay people could handle.

Interwar Policy and Projects in East Prussia

The German federal government decided to mount a concerted campaign in 1918–1919 to expand wartime reconstruction programs in East Prussia to include new construction in the cities and countryside, particularly large-scale housing projects for those left homeless by the war. There were a range of reasons for homelessness: returning soldiers whose homes were destroyed during the conflict, displaced citizens who abandoned their homes as they fled the advancing Russian troops, and Germans who were expelled from territory after the armistice.[50] Reconstruction was one part of a larger federal program whose aim was to improve the overall situation in East Prussia. Its goals were the expansion of the province's economic capacity, improvement of utility delivery, and the "implementation of a vigorous settlement policy" to populate border provinces with ethnic Germans in order to strengthen German territorial claims in the present and the future.[51]

A critical aspect of the interwar reconstruction effort was the passage of new laws intended to support design and construction of more housing, delivered as quickly and efficiently as possible. The new laws extended ones that were already in place, which were part of the growing concern for *Sozialpolitik*, the ways in which the state could support its citizens and guarantee a basic quality of life for all Germans. Housing legislation reflected the developing belief that access to affordable, decent housing was a fundamental human right, but also the provision of good housing was seen as a mechanism by which the state could exercise control over the poorer masses. The March 1918 Preussischer Wohnungsgesetz (Prussian Housing Law) at the state level and the 1919 national constitutional guarantee of adequate housing to every German citizen in Article 155 of the Weimar Constitution were the linchpins

for interwar housing reform.[52] The Prussian Housing Law created a uniform set of rules to govern financing, design and construction of public housing.[53] It increased public subsidies for new housing projects, restricted support to non-profit housing corporations, provided for public appropriation of land for housing under certain circumstances, established base-line criteria for the quality of design and construction, and prescribed the establishment of local and regional housing authorities to manage finance, design, and construction processes. Article 155 assured every German a "healthful habitation" and "homesteads for living and working that are suitable to their needs." Soldiers were promised special consideration in the forthcoming homestead legislation, what became the Reichsiedlungsgesetz (Reich Settlement Law). In fact, the Reichsiedlungsgesetz of 1919 legislated resettlement in rural parts of Saxony, Silesia, and East Prussia, adding further impetus to reconstruction.[54]

According to Johann Hermann Wilke, who authored a three-page summary describing the politics and practical side of the reconstruction effort during the war and interwar periods, the principal goal for reconstruction from the start in 1914 was providing East Prussians with a house that was "nice and functional."[55] He makes clear that "nice" means acceptable in terms of the amount of space and amenities provided but not in terms of aesthetics. Function is the primary consideration, given the many constraints. In Wilke's view, speed of construction was essential to reconstruction since so many East Prussians were homeless and temporarily housed in the same wood and mud barracks that had been used for prisoners-of-war. Wilke also comments on the exigencies that led to experimentation with materials like concrete block over more traditional ones like brick. For residents of two provinces considered the "border of German culture" and "the bulwark against Eastern and Asian infiltration," however, being denied the comforts of a traditional German brick house would be distressing.

In actuality, guidelines for design were more explicit even than those Wilke reported on: beginning in 1915, federal officials developed a set of artistic principles for reconstruction.[56] In addition to function, new houses should be "comfortable, homey ones whose hearth and garden please the East Prussian people."[57] Design needed to consider economic viability, the agrarian lifestyle, and the character of the province, objectives pushed by the *Heimatschutz* movement. The buildings should be low-rise, to mimic the historic fabric, and use aesthetics that fit this fabric along with modern spatial planning and construction techniques. They should be as small as possible and experimentation with ersatz materials and building techniques was encouraged.[58] The use of ersatz materials had burgeoned during the blockade of Germany in the First World War, so German industry led in this area internationally.[59] Future development was also to be considered. The parameters included forceful advice to avoid styles like Jugendstil that were not typical of local architecture and to carefully consider how to integrate modern design with the historic context. These guidelines

prescribe an approach closely followed by Scharoun in East Prussia as well as others like Ernst May in Silesia, who also documented the precepts in numerous issues of the journal *Schlesisches Heim* (*Silesian Home*).[60]

Scharoun's Bunte Reihe in Insterburg is one example of a "nice and functional" project executed soon after the war, whose overall design incorporates many of the wartime innovations. Bunte Reihe was the first solo architecture project Scharoun ran out of the Insterburg office that was not commissioned by the military.[61] Designed and constructed between 1920 and 1924 to house postal and rail workers, the Bunte Reihe development consists of 17 buildings arranged in a loosely formed T along two roads. Parallel facing rows of once-colored housing sit on either side of Bunte-Reihe Street, two smaller single blocks lie further on like punctuation points, and two more long rows of three-story housing extend along Kamswyker Allee to form the top of the T. A second row of small double houses was built parallel to both blocks on Bunte-Reihe Street.[62] All in all, there are 83 units of differing sizes.

The only extant floor plans for Bunte Reihe show tight functional spatial planning.[63] Four units are grouped around a common entry and stair with two units per floor. A typical unit has a small entry foyer, four small rooms, a minimal toilet and bathroom, and a kitchen arranged with the least possible wasted space: the only circulation space is the tiny foyer. The kitchen, toilet and two of the rooms – those for living and dining – are accessed through the foyer, the bedrooms are accessed through the living and dining rooms. The spatial planning conforms to the Existenz Minimum (Existence Minimum), whose goal was to develop the most functional plan using the least space necessary for a comfortable flat, a planning concept that gained popularity in the period.[64] Scharoun's experience in the Bau Kommando taught him economical spatial planning: the bunkers and military service buildings were all planned as efficiently as possible, with as little wasted space in plan or section as could be devised [fig. 2.4].

Although Wilke describes the use of concrete block in many reconstruction projects, Bunte Reihe is made of brick covered over in colored stucco, hence the name. A photograph of another contemporary project in Insterburg, the double house on Pregel Street, shows workers laying brick for a site across the street. There are piles of rubble brick on the ground behind the workers and in a nearby cart, which suggests that some of the reconstruction projects used materials scavenged from ruined buildings.[65] It is likely that Scharoun chose brick because it was locally produced, or readily available as a recycled material from war rubble, which would have made it economical in spite of interwar material shortages. Like the Kommando's choice of wood from local forests for the prisoner-of-war camps, selecting brick was opportunistic. It is also relatively easy to conceal sloppy brick work by covering it with render, another reason that brick might have been deployed.

Figure 2.4: Siedlung Bunte Reihe in Insterburg designed by Hans Scharoun after the war. The view shows the subtle variations in window shapes over the entryways. © Creative Commons.

The housing rows are long orthogonal blocks, essentially rectangular in plan, topped with a gently pitched roof, small dormer windows, and little volumetric articulation. Such straightforward volumes are easier to construct than more complex ones, another likely reason for Scharoun's design. Scharoun did indulge in some modulation of the facade on the rear face where he repeatedly angled two short walls in relationship to the facade in order to create a subtle undulation that originally contained a small balcony. Similarly, the building ends are not flat but two angled planes protruding into space [fig. 2.5]. Visual variation and articulation was almost exclusively limited to the play with colors and the occasional oddly shaped window over an entry. These strategies are similar to the ones that Scharoun had used in his designs for prisoner-of-war camps where embellishment and decoration were rare. At the camps, Scharoun made watch towers and communal buildings in unconventional shapes and sizes, with unusual roof forms so that they served as visual relief and therefore a kind of ornament while rhythmic arrangement of windows was the only element that disrupted the architectural monotony of the barracks.

Figure 2.5: The end of the bar building, Siedlung Bunte Reihe. The angling of the facade to animate the building end and the brick construction are both apparent here. © Creative Commons.

Scharoun also seemed to owe a debt to contemporary publications on reconstruction and preservation. In 1917, 1922, and 1928, Georg Steinmetz published three volumes called *Grundlagen für das Bauen in Stadt und Land* (*Principles for Building in City and Country*) that together sought to catalog the principal historic building types in East Prussia along with modern options in order to facilitate the reconstruction effort.[66] Steinmetz's project was jointly sponsored by the Reichsverbandes Ostpreußenhilfe (Reich Association for East Prussian Aide) and the Deutschen Bund Heimatschutz (German Federation for Homeland Protection). The books feature plans, elevations, site strategies, and photographs with suites of options that include modern adaptations of historic tropes. At the same time, between 1919 and 1925, May published articles in *Schlesisches Heim* on how to design large-scale housing projects with sample types that documented all aspects of design from floor plans to sections to elevations.[67] Steinmetz and May show simple building volumes with traditional pitched roofs, often historic elements like eyebrow windows or ornamented doors, stucco facades, and functional and economic spatial planning. The designs were meant to appeal to uneducated local tastes, to fit in with historic vernacular buildings destroyed during the war, and to be cheap and easy to build, as mandated by government policy.[68]

Scharoun did deploy one strategy that May seems to have ignored but Steinmetz promoted: the use of color. A signatory to Bruno Taut's famous *Ruf zum farbigen Bauen* (*Call to Colored Architecture*) of 1919, Scharoun shared Taut's belief in the power of color to enliven architecture and to stand in for more traditional forms of ornament. Render facades were long-established in Germany, dating at least to the eleventh century, although they were not historically painted the bright and varied palette used at Bunte Reihe but in earthier and more neutral colors. The German word for render, *putz*, has its origins both in "to clean" and "to beautify;" the double entendre might partially explain the material's long-lived popularity. Render is a general term for a range of different compounds with varying consistency and texture. Scharoun originally had the render facades on the two facing parallel blocks painted in bright, primary colors – red, yellow and blue – while the other blocks were apparently painted in more sober colors.[69] Primary colors also featured as accents in the details of doors and windows used to enliven the architectural composition. Color is an extremely economical ornament to use; it was also becoming popular with a segment of the avant-garde at this time.[70] Scharoun did not use color much, if at all, on the sober military architecture he had designed, but he did learn how minimal design embellishments can greatly enhance simple architectural forms. The variations in window shapes, small manipulations of the facades, and restrained use of color were all similar techniques.

It is tragic that most of Scharoun's interwar buildings in East Prussia did not survive the Second World War and that so much of the documentation was lost, since these were the architect's first attempts to develop a unique architectural language. The East Prussian buildings are also the ones most directly influenced by Scharoun's wartime experience, his tutelage under Paul Kruchen, and his work on military architecture. However, the transitional nature of the work for Scharoun is clear from what remains: he used it to test lessons from the war in peacetime and to begin to experiment with new ideas like three-dimensional plastic form and color. His inventive use of materials to hand, early adoption of functional planning yet resistance to oversimplifying solutions or aesthetics, and his ability to enliven a simple design with minimal means were all lessons taken from the war that continued to inform his architecture throughout his life.

Notes

1 Johann Hermann Wilke, *Der Stein des Waisens: Zum Wiederaufbau Ostpreußens* (1915), accessed July 2019, <http://resolver.staatsbibliothek-berlin.de/SBB0000873500000000>; Hans Scharoun, document without name or date, Scharoun Archive, Dokumente vor 1945, Mappe 4.1, Akademie der Künste Berlin (AdK).

2 This essay would not have been possible without the help of the intrepid Jordan Troeller, who generously waded through the files at the Geheimes Staatsarchiv Preußischer Kulturbesitz for me in August 2019.

3 Research into the reconstruction effort is hampered by the destruction of the Reichsarchiv in Potsdam on April 14, 1945. Material has survived in some private archives, such as the Hans Scharoun Archive at the Akademie der Künste Berlin, archives of the Prussian ministries, and regional archives. This essay relies on the material in the Scharoun Archive and material from the Geheimes Staatsarchiv Preußischer Kulturbersitz. An excellent article by Jochen Oltmer, "Unentbehrliche Arbeitskräfte. Kriegsgefangene in Deutschland, 1914–1918," in *Kriegsgefangene im Europa des Ersten Weltkriegs*, ed. Jochen Oltmer (Paderborn: Ferdinand Schöningh, 2006), 67–96, confirmed much of the material from the Scharoun Archive.

4 Since this essay is about the period when East Prussia was German territory, it will use the German names rather than the Polish ones.

5 Anthony Brandt, "Blind Bear at Bay: obligated by treaties to declare war in August 1914, Russia was unprepared to attack, and in East Prussia its vast army soon proved no match for German intelligence, reconnaissance and railways," *MHQ: The Quarterly Journal of Military History* 28, no. 4 (Summer 2016), 44–52.

6 Geheimes Staatsarchiv Preußischer Kulturbesitz (GStPK), XX. HA Rep. 2II, 3576, Bds. 22, 3, and 4 describe the Russian attack on East Prussia; Alexander Watson, "'Unheard of Brutality': Russian Atrocities against Civilians in East Prussia, 1914–1915," *Journal of Modern History* 86, no. 4 (December 2014): 780–825; Holger H. Herwig, *The First World War. Germany and Austria-Hungary, 1914–1918* (London: Arnold, 1997), 127–8.

7 "Der Wiederaufbau Ostpreußens und das ostpreußische Handwerk," Scharoun Archive, Dokumente vor 1945, Mappe 3.2, AdK; Letter of Oberpräsident to Präsident des Staatsministeriums in Berlin, April 9, 1921, and table 2 accompanying it. GStA, Berlin: XX. HA Rep. 2II, 3759, reverse of fols. 56 and 64 – cited in Watson, "'Unheard of Brutality'," 787.

8 Report by Regierungspräsident Gumbinnen to Unterstaatssekretär Heinrichs, April 21, 1915. GStPK, Berlin: I. HA Rep. 90A, 1064, 7; cited in Watson, "'Unheard of Brutality'," 788.

9 Report of Regierungspräsident Königsberg, September 16, 1914. GStPK, Berlin: XX. HA Rep. 2II, 3558, fol. 17; cited in Watson, "'Unheard of Brutality'," 788.

10 Wilke, *Der Stein des Waisens*, 1.

11 "Der Wiederaufbau Ostpreußens und das ostpreußische Handwerk," Scharoun Archive, Mappe 3.2, AdK.

12 "Der Wiederaufbau Ostpreußens als künstlerische Tat," GStPK, XX. HA Rep. 2II, 3584, 4; Wilke, *Der Stein des Waisens*, 1.

13 "Geschichtlich," Scharoun Archive, AdK, 1.

14 The Germans did not expect such rapid success or so many prisoners-of-war so they had nowhere to house all these men.

15 "Der Wiederaufbau Ostpreußens und das ostpreußische Handwerk," Scharoun Archive, Dokumente vor 1945, Mappe 3.2, AdK.

16 Jürgen Kocka, *Klassengesellschaft im Krieg: Deutsche Sozialgeschichte, 1914–1918* (Göttingen: Vandenhock und Ruprecht, 1978), 156; Christian Döring, *Die Bevölkerungsbewegung im Weltkrieg*, vol. 1 (Copenhagen: Luno, 1919), 10; cited in Oltmer, "Unentbehrliche Arbeitskräfte," 68.

17 "Das Arbeitslager im Aufbaugebiet," Scharoun Archive, Mappe 3.5, AdK.

18 Paul Kruchen, "Unseren Kriegsgefangenen und ihre Verwendung beim Wiederaufbau der Provinz Ostpreußen," Scharoun Archive, Dokumente vor 1945, Mappe 3.3, AdK.
19 "Grundstoffe," Scharoun Archive, Mappe 3.1, Nr. 1.
20 The eastern regions of Prussia were a late addition to the province, a fact that may explain the area's long history of marginal identity in relationship to the rest of Germany. See Christopher Clark, *Iron Kingdom: The Rise and Downfall of Prussia, 1600–1947* (Cambridge, Mass.: Belknap Press of Harvard University Press, 2006), 190–210, and Norman Davies and Roger Moorhouse, *Microcosm: Portrait of a Central European City* (London: Pimlico, 2003), 200–18.
21 "Grundstoffe," Scharoun Archive, Mappe 3.1, Nr. 1.
22 Kruchen, "Unseren Kriegsgefangenen und ihre Verwendung beim Wiederaufbau der Provinz Ostpreußen."
23 *Ibid*.
24 "Baubearbeiten mit den deutschen Bauhandwerken in bürgerlicher und militärischer Stellung und mit Kriegsgefangenen Russen," Scharoun Archive, Mappe 3.1, Nr. 2, AdK.
25 "Notwendigkeit, Leistung und Anpassung der Militärbau-Kommando," Scharoun Archive, Mappe 3.3, AdK.
26 *Ibid.*
27 *Ibid*.
28 "Baubearbeiten mit den deutschen Bauhandwerken in bürgerlicher und militärischer Stellung und mit Kriegsgefangenen Russen," Scharoun Archive, Mappe 3.1, Nr. 2, AdK.
29 Convention for the Amelioration of the Condition of the Wounded and Sick in Armies in the Field, 11 L.N.T.S. 440, entered into force August 9, 1907, no longer in force, accessed July 1, 2019, <http://hrlibrary.umn.edu/instree/1906a.htm>.
30 There were an estimated 8 million prisoners-of-war taken by all combatants during the First World War, which led to a small industry not only in Germany but in Russia and Austria-Hungary, and to a much lesser degree in France and Great Britain. All combatants used prisoner-of-war labor in varying conditions; however, the state of the prison architecture is difficult to ascertain. See Heather Jones, "Prisoners of War," *1914–1918 Online., International Encyclopedia of the First World War*, accessed January 24, 2020, <https://encyclopedia.1914-1918-online.net/article/prisoners_of_war>; and Heather Jones, "Prisoners of War," accessed January 24, 2020, <https://www.bl.uk/world-war-one/articles/prisoners-of-war>.
31 Actual drawn site plans of the Kruchen camps have not survived but there is a drawing of the Sachsenhausen Camp site plan from the Second World War, which is very similar to the descriptions of Crossen.
32 "Das Kriegsgefangenenlager," Scharoun Archive, Mappe 3.1, Nr. 4, AdK.
33 *Ibid*.
34 *Ibid*.
35 Marion C. Siney, *The Allied Blockade of Germany, 1914–1916* (Ann Arbor, Mich.: University of Michigan Press, 1957); Marjorie Milbank Farrar, *Conflict and Compromise: The Strategy, Politics and Diplomacy of the French Blockade, 1914–1918* (The Hague: Martinus Nijhoff, 1974); Charles Paul Vincent, *The Politics of Hunger: The Allied Blockade of Germany, 1915–1919* (Athens, Ohio: Ohio University Press, 1985).
36 Roger Chickering, *The Great War and Urban Life in Germany: Freiburg, 1914–1918* (Cambridge: Cambridge University Press, 2007), 130–2. Chickering describes the effects of shortages on local economies.
37 Wilke, *Der Stein des Waisens*, 1.

38 *Ibid*., 1; not only was this a solution that the Kommando embraced, but the East Prussian parliament recommended exactly the same strategy for general reconstruction.
39 *The Forests in Germany: Selected Results of the Third National Inventory* (Berlin: Federal Ministry for Food and Agriculture, 2015).
40 "Das Kriegsgefangenenlager," Scharoun Archive, Mappe 3.1, Nr. 4, AdK.
41 *Ibid.*
42 *Ibid.*
43 "Der Umwandlung des in Ostpreußen Baukommandos," Scharoun Archive, Mappe 3.3, AdK; "Grundstoffe," Scharoun Archive, Mappe 3.1, Nr. 1; a note from the director of the Ostpreußische Landesgesellschaft dated August 27, 1918 mentions "[t]he War as a teacher of makeshift construction" and suggests that the lessons of the Kommando are worthy of adoption post-war. GStPK, XX. HA, Rep. 2II, 3743, 4.
44 *Nachrichtenblatt*, Nr. 46, May 18, 1918, p. 2.
45 For more on the history of housing cooperatives see, for example, David Kuchenbuch, *Geordnete Gemeinschaft: Architekten als Sozialingenieure – Deutschland und Schweden im 20. Jahrhundert* (Bielefeld: Transcript, 2010); Tanja Poppelreuter, *Das neue Bauen für den neuen Menschen: zur Wandlung und Wirkung des Menschenbildes in der Architektur der 1920er Jahre in Deutschland* (Hildesheim: Olms, 2007); and Axel Schildt and Arnold Sywottek, eds., *Massenwohnung und Eigenheim: Wohnungsbau und Wohnen in der Großstadt seit dem Ersten Weltkrieg* (Frankfurt: Campus, 1988).
46 "Grundstoffe," Scharoun Archive, Mappe 3.1, Nr. 1.
47 Files in the GStPK, XX. HA Rep. 2II, 3704, "An Herrn Reg. Presidenten in Gumbinnen," 57–60 are a series of missives between officials in East Prussia and Berlin about shutting down the Bau Kommando by April 1, 1919.
48 As mentioned at the beginning of the essay, most of the archival material was destroyed on April 14, 1945 during the Second World War when the central archives in Potsdam were bombed.
49 Wilfried Wolff, "Insterburg – Scharoun – Berlin: Ein Puzzle fügt sich," *Baukammer Berlin* (December 2010): 43–8; accessed July 4, 2019, <http://scharoun-gesellschaft.de/projekte/siedlung-kamswyken-insterburg/>.
50 Hermann Christlieb Matthäus von Stein, *Erlebnisse und Betrachtungen aus der Zeit des Weltkrieges* (Leipzig: K. F. Koehler, 1919).
51 Dieter Hertz-Eichenrode, *Politik und Landwirtschaft in Ostpreußen, 1919–1930: Untersuchung eines Strukturproblems in der Weimarer Republik* (Cologne: Westdeutscher, 1969), 170–1.
52 Benedikt Schmittmann, ed., *Preußisches Wohnungsgesetz und Bürgschaftssicherungsgesetz, 1918* (Berlin: Guttentag, 1918). For details about the law, see Frederick F. Blachly and Miriam E. Oatman, *The Government and Administration of Germany* (Baltimore: The Johns Hopkins Press, 1928), 604–5; Richard Bessel, *Germany after the First World War* (Oxford: Oxford University Press, 1993).
53 "Brauchen wir ein Wohunungsamt?," *Bergische Arbeiterstimme*, August 31, 1918, Stadtarchiv Solingen; accessed June 3, 2019, <https://archivewk1.hypotheses.org/tag/preussisches-wohnungsgesetz>.
54 For the background on the resettlement campaign and an account of it in Silesia, see Susan R. Henderson, "Ernst May and the Campaign to Resettle the Countryside: Rural Housing in Silesia, 1919–1925," *Journal of the Society of Architectural Historians* 61, no. 2 (June 2002): 188–211.
55 Wilke, *Der Stein des Waisens*, 2.
56 "Der Wiederaufbau Ostpreußens als künstlerische Tat," GStPK, XX. HA Rep. 2II, 3584, 4.

57 *Ibid*.

58 "Niederschrift," 1918, GStPK, XX. HA Rep. 2II, 3743, 3–4; "Bericht," August, 26 1918, GStPK, XX. HA Rep. 2II, 3743, 5–8.

59 For more on the history of Ersatz in Germany see "Die Welt des Ersatzes," *Neue Freie Presse*, November 29, 1917; "Die Ersatzmittelausstellung," *Neue Freie Presse*, June 8, 1918; and Lena Hallwirth, "Die Versorgung der Zivilbevölkerung mit Lebensmitteln und Ersatzlebensmitteln während des Ersten Weltkriegs," Masterarbeit, Institute of Social Ecology, Vienna, Alpen-Adria-Universitaet Klagenfurt Vienna, Graz, 2016. (Thanks to Erin Maynes for these references.)

60 Henderson, "Ernst May and the Campaign to Resettle the Countryside." Claudia Quiring, Wolfgang Voigt, Peter Cachola Schmal, and Eckhard Herrel, eds., *Ernst May: 1886–1970* (Munich: Prestel, 2011).

61 Unfortunately, the original drawings were all lost during the Second World War. For information on the Bunte Reihe, see Carsten Krohn, *Hans Scharoun: Bauten und Projekte* (Basel: Birkhäuser, 2018); Dimitri Suchin, "Baugeschichte der Bunten Reihe," accessed July 21, 2019, <http://de.instergod.ru/biografiya-domov/istoricheskaya-sprav-ka-pyostryiy-ryad.html>; Wolff, "Insterburg – Scharoun – Berlin"; Benedikt Hotze, "Bunte-Reihe Scharoun in Ostpreußen," *Baunetzwoche*, no. 180 (2010): 3–17. The German architect, Dimitri Suchin, has been the most active advocate for historic preservation and restoration of the surviving Scharoun projects in Insterburg including Bunte Reihe.

62 Photographs from the Scharoun Archive; reproduced in Krohn, *Hans Scharoun*, 34–5.

63 Reproduced in Krohn, *Hans Scharoun*, 35; and reproduced in Wolff, "Insterburg – Scharoun – Berlin," 44 from a photograph taken by Dimitri Suchin.

64 One well-known example is Hans Scharoun's design for the Ledigenheim in Breslau, completed in 1929. The units were about 27 square meters!

65 Photograph of Siedlung Pregelstrasse, Scharoun Archive, AdK, Mappe MV 20; reproduced in Krohn, *Hans Scharoun*, 33.

66 Georg Steinmetz, *Grundlagen für das Bauen in Stadt und Land*, vol. 1, *Körper und Raum* (Berlin and Munich: Georg D. Callwey, 1917); *Grundlagen für das Bauen in Stadt und Land*, vol. 2, *Besondere Beispiele* (Berlin and Munich: Georg D. Callwey, 1917); *Grundlagen für das Bauen in Stadt und Land*, vol. 3, *Praktische Anwendungen* (Berlin and Munich: Georg D. Callwey, 1922).

67 Typical articles by Ernst May include "Siedlungspläne," *Schlesisches Heim* (1919): 7–10; "Kleinwohnungtypen," *Schlesisches Heim* (1919): 14–7; and "Notheime," *Schlesisches Heim* (1920): 1–11.

68 Henderson, "Ernst May"; Deborah Ascher Barnstone, *Beyond the Bauhaus: Cultural Modernity in Breslau, 1918–1933* (Ann Arbor, Mich.: University of Michigan Press, 2016).

69 A simulation of the paint scheme can be found at <http://scharoun-gesellschaft.de/projekte/siedlung-kamswyken-insterburg/>.

70 Scharoun was a signatory to Bruno Taut's "Ruf zum farbigen Bauen" (Call to Colored Architecture) in 1919, so Scharoun's use of primary colors in Insterburg is not surprising.

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