Architecture of the Holocaust

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THE JOSEPH AND REBECCA MEYERHOFF ANNUAL LECTURE honors excellence in Holocaust research and fosters dissemination of cutting-edge Holocaust scholarship. Generous philanthropists, Joseph and Rebecca Meyerhoff of Baltimore, Maryland, provided support to organizations world-wide, focusing on Jewish learning and scholarship, music, the arts, and humanitarian causes. Their children, Eleanor Katz and Harvey M. Meyerhoff, Chairman Emeritus of the United States Holocaust Memorial Council, endowed this lecture.
Few surviving buildings connote the horrors of the Holocaust more than the entrance Guard House at the gates of the concentration camp of Auschwitz-Birkenau (fig. 1). This is no work of architecture as we usually think of it, that is, something aesthetic and worthy of analysis. Indeed, we are so familiar with this building that we really don’t see it any more. It appears on the covers of books, provides the opening shot of documentary films, and shows up in countless movies or works of art, not to mention survivor testimonies. We see it always as the stable, massive, and symbolic form it is. Yet, it is not only a static symbol—it is also a product in time, whose final form resulted from the many hands that constructed the building and who changed its meaning more often than we might think. But while some of those involved were architects, we still think of this building—if at all—as a marker of genocide, not as architecture.

Such a smooth separation of architecture from genocide, however, soon falls apart if we attend more closely to the building not as symbol but rather as process. What happens if we move our attention from the general significance of the building and think about its individual forms over time (the “building-in-time,” as art historian Marvin Trachtenberg formulated it)? Take the example of a particular detail, something that disrupts our attention to the form as a whole: a seam in the brickwork just to the right of the central tower as one approaches (fig. 2). Once observed, it is hard not to notice it over and over again in the photographs. It has been hiding in plain sight.
This seam marks the building-as-process, a building not static. The addition of a new wing at this seam marks a rise in the ambitions of the SS in 1943, men who saw no contradiction between murdering more of Europe’s Jewish population and expanding the capacity to more slowly work to death tens of thousands of others.

But this institutional perspective on the perpetrators is not the whole story. For it too had to be constructed. Bricks and mortar had to be brought to the site, foundations dug and pipes laid. Site foremen consulted plans and adapted orders. And finally, this building had to be coordinated with the hundreds of others under construction at the same camp both to make room for more forced laborers and to accommodate the SS, for example by adding a matching entrance pavilion to the new SS housing facility just down the road. The bricklayers also attended to detail, for example aligning the beveled cornice of three diagonally placed rows of brick to establish unity with the previous structure. All of this work was accomplished, of course, using forced labor. We cannot lose sight of the fact that the building represents not only the plans of perpetrators but also the activity of victims; it embodies their oppression or, occasionally, their acts of survival. From the generation of designs to the coordination of construction to the hauling of materials to the

Figure 1. SS Central Building Office (Zentralbauleitung), entrance guard house, Auschwitz-Birkenau (1941-1943) (author’s photo)
laying of bricks, the building process was one in which the goals of the SS intersected with victims’ experience. These groups had different understandings of this grotesque site, but it was here, in space, at this seam, that we see the evidence of how individual histories and architectural ambitions converged in 1943.

In the following, I would like to address this convergence of history and space in the building process. Buildings are important sites that evidence the ideologically driven project of the Holocaust; but they also leave traces of the victims who constructed or experienced these sites while moving through the genocidal system. In this sense, they are an ideal and overlooked source for exploring what Saul Friedländer called an “integrated history” of the Holocaust. For Friedländer, a history of the Holocaust requires both an understanding of perpetrator policies and victims’ beliefs and experiences. After all, the experience of a single individual, however powerful, can never explain the institutional and political conditions of the whole process, just as, conversely, a view of the entire scope of the genocide inevitably erases the unique experience of particular individuals. As Friedländer himself put it so well, “It is too often forgotten that Nazi attitudes and

Figure 2. Zentralbauleitung, entrance, Auschwitz-Birkenau (detail of seam), c. 1943 (author’s photo)
policies cannot be fully assessed without knowledge [as well] of the lives and indeed of the feelings of the Jewish men, women, and children themselves.” The architecture of the Holocaust offers one means to formulate a more profound “integrated history.” The structures that served as sites for the persecution of the European Jews were designed by the SS, built by forced laborers, and experienced by camp inmates; each category of participant bore a particular relationship to each building. The tension between these varied meanings needs to be reflected in any integrated history of the Holocaust. The seam in the wall at Birkenau certainly concretizes SS ideological ambition, but it also concretizes the lives of the Jewish and other forced laborers. The history of the building in particular and the Holocaust in general are neither simply particular nor simply general, but rather both.

To pursue this argument, the present paper considers three distinct sources: a plan, a testimony, and a digital map. Each tells us something different. Together, they do not create a continuous narrative, but rather a relational one. Each part conveys a particular aspect of the Holocaust. First, the architectural plan speaks to the development and implementation of the perverse ideological goals of the SS, which included the brutal use of European Jews and other victims as forced laborers. Second, and conversely, the survivor’s testimony reflects little interest in discussing the larger goals of forced labor but rather focuses in on the experiential; it records a personal understanding of specific events at particular moments and in particular spaces, for instance the roles of women in the construction process. Third, I will explore how these two different aspects of the story can be modeled in the digital environment. None of these kinds of sources can offer a complete history, but together they form what I will call a relational one. A true integrated history of the Holocaust that works towards a total understanding of the event must by definition be a relational one. It is only by thinking relationally that we do not lose the survivor’s story in the vast abstraction of a systemic analysis of the concentration camp network. Each records its side of the history, each remains distinct, and each is necessary to explaining the Holocaust. The digital map helps us clarify and relate both perspectives.

My reliance on digital mapping, a component of what is generally known as digital humanities, is not meant as another advocacy of “the next big thing.” Rather, my analysis here is a defense of digital mapping as a conceptual method that not only contributes to our understanding of the Holocaust but also is particularly methodologically suited to the kinds of historical questions we ask of the Holocaust. Holocaust studies inevitably grapples with the vast scale of the event and its
documentary evidence as well as the intimate scale of the individual victim, and it is difficult to negotiate both of these focuses without the digital. The digital here is not the “truth,” because a database and visualization in a map have serious limitations, widely debated in the digital humanities community. But the digital map here functions morphologically, giving form to the relationship of the individual to the systemic. We need new approaches such as digital mapping, but used relationally to other historical sources so that we can see the form of that more complete and vast history. And this goal brings us closer to understanding architecture as a crucial component of the complexities of an integrated history of the Holocaust.

I. The Plan
Let us start with the plan (fig. 3). Untersturmführer Lothar Hartjenstein finished this plan for Auschwitz I on November 12, 1942. Hartjenstein worked under Hans Kammler in Amt (Division) C of the Economic- and Administrative Main Office (WVHA) of the SS, located in Berlin and led by Oswald Pohl. This division managed all of the SS’s administrative duties, including building activity and forced labor. The plan shows changes to the main camp (Auschwitz I) along with the surrounding area. While it is a largely finished drawing, it remains one among thousands, with some coming from the Central Office of the WVHA but most created in the Central Building Office (or Zentralbauleitung) of the camp itself.

This plan is also quite particular, coming as it does at a very specific moment of the camp’s history and the building activities of the Central Building Office. It gives us insight into the dynamic between architecture and oppression, culture and genocide. Certainly it is not a particularly innovative or surprising design. The curved roads of the SS settlements on each side of the camp were standard in housing-estate planning since the garden city movement of the late nineteenth century; the regular, institutional layout of the inmate spaces as well as the alignment of the forced-labor sites along a central access road (the diagonally arrayed buildings extending from the barracks in the center of the plan) represent the kind of “rational” planning typical of industrial and penal sites in the modern era. But the use of color as well as the spatial and temporal scales of the plan are worth noting, since such formal characteristics help us understand the genocide from the perpetrator’s perspective. For example, in the original there are orange and green-blue complementary colors, used only in the central diagonal section of the plan, drawing our special attention. These are the areas focused on industrial forced labor, like the Krupp Works (to the left,
inside the camp), the new SS administrative headquarters, and original or expanded housing for the inmate population. But these areas are not only visually prioritized, they are temporally prioritized as well. The key indicates that the building office was concerned to indicate which buildings were planned, under construction, or finished—it uses different colors and shading to designate each stage.

Finally, the plan also makes us think of time in multiple scales: it offers the micro focus on the prioritized buildings in the middle, but it also offers a macro view by indicating finished buildings, those currently being rushed, and as well those planned for a future in which the SS

Figure 3. Lothar Hartjenstein, Auschwitz I and SS estates (November 1942, “ideal” plan) (Auschwitz-Birkenau State Museum).
would be an institutional power in Central and Eastern Europe. The housing estates on each side of the main camp, for example, are all about that future. The SS conceived of immediate needs, strategically highlighting the construction that was being prioritized in connection with the war, the expansion of administrative spaces, and the desire to gather more inmates. At the same time, however, it kept in focus its ambition for a dominant future, one marked by cities and settlements in “Eastern lands” freed of Jews, Slavs, and others deemed inferior. The implementation of this plan required genocide. Spatial thought here is deeply genocidal thought, genocidal thought spatial. Tactical time and strategic time cannot be separated: building the future required building the present, genocide required forced labor.

The large area encompassed in Hartjenstein’s drawing, as well as the drawing’s reflection of SS interests in a variety of purposes for the site, reflects the urban-scale of the architect’s thinking. The SS was concerned with design at the smallest spatial scale, evidenced by thousands of drawings and details; but they also were interested in urban and regional planning, as indicated in this plan. Indeed, they organized building activity at the continental-scale, as seen in the mobile forced labor construction brigades that traveled all over Nazi-dominated Europe. Hartjenstein’s plan evidences that kind of thinking: for such architects the scale of the present and of the future was vast, and scale—for them—measured control over building and space.

However, the perpetrator’s view belies the facts of who was doing the building. Here the ideologically perfect world of the plan drives us back into the archive to see the messiness of the actual building process. Hartjenstein’s neat categories crumble in the face of a complex world of day-to-day construction, with thousands of orders for construction materials, working drawings, and of course labor. The SS solved logistical problems by throwing at tasks its most abundant resource: the forced labor of Jewish and non-Jewish prisoners not immediately selected for the gas chambers. The records from Auschwitz, albeit incomplete, are stunning in what they reveal about the involvement of architecture in forced labor. We are able to get a particularly good view into the scale of forced labor in construction from monthly reports for 1942, when Hartjenstein was working on his plan. While there are spikes and troughs in the numbers, by July of that year, at least 8,530 men and 3,200 women were at work each day, totals that remained above 5,000 even in December, a high figure for that time of year. By July 1942 approximately 160 forced laborers were working as draftsmen in the office of the Zentralbauleitung itself.
What can we make of these numbers? On the one hand, they clearly correspond to the optimistic flurry of planning and activity for Auschwitz in late 1942, as well as in the shift towards the armaments economy that began gathering steam in 1943. On the other hand, the numbers highlight what scholars have not really addressed: how much of the daily life of inmates was occupied by the often brutal work of construction—hauling materials, digging foundations, laying pipes, sawing wood, and the like. The very size of the labor force, as well as its complexity (including forced-labor architects and draftsmen), highlight what a priority this was for the SS.

The numbers also imply the question of whether Auschwitz was the exception or the rule for the SS and the camp system as a whole, a question that helps us assess the significance and context of our specific analysis of the Hartjenstein plan. My colleague and co-author Anne Kelly Knowles and I have explored forced labor in the camp system as a whole through our use of Geographic Information Systems (or GIS). We used GIS to visualize the camps database that formed the core of Volume 1 of the United States Holocaust Memorial Museum’s *Encyclopedia of Camps and Ghettos.* Of the 1,111 camps in that volume, 188 had no known specific labor orientation. But of the 923 remaining, 40 percent list construction as a primary or secondary use for forced labor. (The corresponding figure for armaments production is 32 percent.) Our map (fig. 4) presenting this data also indicates the clear clustering of camps—the grey dots in the center—at which armament production was a primary function of forced labor. Construction sites proliferated more abundantly along the periphery of the overall camp system. (Even though women were significantly involved in building, the percentage of women’s camps that list construction activity as the major economic activity is relatively low.) Sub-camps emphasizing construction were more dispersed; centrally located sub-camps emphasized armaments relatively more.

There are caveats: the encyclopedia articles themselves can be ambiguous on the distinction between construction and armaments work; further, the numbers of camps we see represented on the maps may tell us about the dominant function of the camps, but they do not tell us anything of the overall number of their prisoners. But as with many digital humanities projects, the goal of engaging the GIS environment is not to come up with a positivist representation of information on the camps, but rather to visualize that information in a variety of formats that suggest new problems and questions for analysis, for instance why construction activity in the camps would be concentrated so heavily at the periphery of the system. Further, mapping forces us to recognize...
construction as a separate activity, contingent to both armaments production and genocide. Construction’s centrality to the SS system brings us to the impact of building on the individual inmate’s experience.

II. The Testimony

However much the plan might allow us to analyze various aspects of SS ideology and assess the scale of Nazi ambition, a system-wide analysis also can obscure much. For example, from the map in fig. 4 we might conclude that women were less involved in construction than men, given that the visualization of the primary and secondary functions of their camps suggest this pattern (construction was a primary function for the most part in men’s camps). It would be easy to ascribe this to the fact that construction work relied on manual labor, seemingly more suitable to men. But we know all too well that the Nazi apparatus practiced no such parsing of labor and gender: women were as likely to be involved in difficult physical labor as men, and this affected their chances of survival just as much.18 The Hartjenstein plan and the attendant map of the forced-labor camp

Figure 4. Camps by primary forced-labor activity of either armaments manufacture (grey) or construction (black), 1939–1945 (courtesy Anne Kelly Knowles).
system are only documents, and, like any evidence about the motivations of the perpetrators, they can obscure other questions about the latter and their victims. This becomes clear from the words of Jewish survivors who spoke about construction work or architecture during the Holocaust.

Considerable scholarship has drawn upon survivor testimonies as an invaluable source for understanding ethical and social dimensions of the Holocaust. In this literature, testimony offers both “common” and “deep” elements. The “common” elements are those places where survivors locate their stories within the well-known historical and geographic arc of the Holocaust, for instance an account of a group transport to Auschwitz, or the chronological organization of a series of events ending with liberation.

But the “deep” elements are perhaps the most relevant to any discussion of memories of the built environment. Deep elements are those moments of testimony (often fleeting) in which the individual survivor reveals a specific experience, perception, or story of a very particular place in time and space. These micro-moments can be abrupt interruptions in a testimony, or may be remembered fragments with chronological and spatial references that may or may not fit neatly into a larger historical narrative. In video testimony the briefness with which an event is mentioned does not indicate its relative importance; after all, the format of the Shoah Foundation Visual History Archive (VHA) testimonies—allowing three hours for an entire life story—doesn’t leave a lot of time to dwell on any particular event. Nevertheless, I would argue that forced-labor in construction appears consistently as a kind of “deep” element in survivor testimonies.

This is particularly evident when we look at the cases of women forced-laborers. In spite of what the map of sub-camps (fig. 4) might imply, women were often involved in this brutal forced labor. The women in the VHA testimonies implicitly speak to the building policies of the SS, and how these affected large numbers of inmates. But when women directly discuss their own work in construction it is rarely with any sense of what they were building or why. When the purposes of building activity do appear in their reminiscences, it is usually as an eruption into the narrative. Such work has to do with how particular spaces were experienced at specific times and how construction labor came in at a specific moment in their own biographical trajectories. That is to say, the spatial and temporal scale of building-in-time for women is fragmented and occurs at the micro level of the individual body.

One case in particular illustrates this point, that of Bela Korn, a Polish Jew born in Łódź in 1923. For context, we should note common patterns in how other Jewish women discussed
buildings and construction work. My own sample draws upon the testimonies of twenty-six women survivors who, like Korn, had been assigned to construction either just before, during, or after their time at Auschwitz. Most were in Auschwitz and the SS system from mid-1944 on, i.e., as the SS was expanding its forced-labor operations in line with Germany’s last-ditch buildup of the armaments industry; this was not the optimistic moment of the plan we discussed earlier, but rather the desperate time before the final collapse of the German war effort. The testimonies make clear that the women not only saw the built environment differently than the SS, but that their understanding of building was the exact opposite.

To remind ourselves, the SS emphasized cultural values, long-term shifts in construction activity, multi-functionality of spaces, and even aesthetics. The women, however, couldn’t even see the building as a whole, let alone as a space that was either a part of an institutional policy or any kind of architectural or ideological symbol. The women describe the buildings they worked on as well as those they lived in as fragments made up of rooms, as specifically highlighted features (e.g., chimneys), or merely as sites: a kitchen, a toilet, a gate. Several say “a place” to identify where they were. This kind of radical fragmentation speaks not only to the trauma of memory (always partial), but also to the reduction of space and buildings to constituent elements. This inability to see space results from the dehumanization of Jewish women under Nazi control, when the necessity of merely staying alive consumes all other powers of perception. In Holocaust testimony space is consistently ambiguous.

As we have seen, Jewish and non-Jewish inmates not only experienced these spaces, but built and sometimes designed them. They seem to insert testimony about their work in construction into their narratives abruptly, creating “deep” elements that signal particular experiences. These experiences, indeed, seem to depart from the “common” testimony so sharply that even the Shoah Foundation interviewers skip over them quickly. The women, on the other hand, often repeat them, and in particular by listing the most banal tasks: digging, lifting, carrying, hauling, and site clearing are the most often referenced, with an emphasis on brick, stone, and cement. While the women performed many other physically demanding tasks, construction work consistently features as a sign of their extreme physical oppression, even if it did provide them with the possibility of surviving a little longer: “I had to work hard,” as one put it. “I had to show that we were productive people.”
This context helps us understand one of the most compelling witnesses was Bela Korn. Korn had never heard of Auschwitz at the time of her transport from the Łódź ghetto in 1944. Her echelon arrived on August 28. Korn’s testimony also remains vague about specific agents, buildings, or functions, i.e., those aspects of her experience that might have overlapped SS concerns. She talks about being taken to “other rooms” or saying that “they announced” a selection for labor in Germany. The built environment exists in her recollections—as in those of other women—as a series of fragments: “near the chimneys” signifies “crematorium.” Focused on survival in Auschwitz and in her later memories, Korn paid little attention to policies or relationships of location and time. After only a few days in Auschwitz, she was at the Appellplatz (assembly square) for a selection of inmates to be sent to Germany; when she didn’t hear her name called (in fact it would have been her prisoner number), she grabbed her sister anyway and joined the group being sent, a move she would call her “Auschwitz escape.”

The following eleven-and-a-half-minute segment of her testimony recounts the next several months of Korn’s life, including the experiences of transport, work, and surviving the brutal winter of 1944/45. Yet this period was also punctuated by building. Korn worked at the Langenbielau sub-camp of Gross-Rosen in Silesia (now Bielawa, Poland). The camp was also a site for training SS women guards. Korn remembers that her first impression upon arrival was of construction of barracks and shower; she herself was assigned to building air raid bunkers and “building long ditches.” She was transferred early in 1945 to Parschnitz, another sub-camp of Gross-Rosen (today in the Czech Republic), where she worked for some three months on more air raid shelters. Her account of her movements through various spaces indicates the limits of her perceptions of the organizational structure of the SS system: camp to sub-camp, sub-camp to sub-camp. The chronology and the four distinct stories of construction labor abruptly enter and abruptly drop out of Korn’s testimony, disrupting an otherwise coherent narrative. Her bestial toil hides in plain sight under an otherwise more familiar (if equally horrific) description of women and men desperately fighting to survive.

Bela Korn’s testimony is thus both familiar and unfamiliar, one of thousands recording the degradation of Europe under the Nazis. It affirms but expands our knowledge, reminding us not to forget each individual. Yet its inclusion of forced-labor in construction, and the role of that labor in her survival, is less commonly emphasized in the scholarly literature. This is all the more surprising given that construction work on air raid bunkers (for just one example) appears in many
other women’s personal narratives; as the end of the war neared, inmates witnessed a constant process of construction and destruction as the Germans built and the Allies bombed.29 This experience of the built environment had no meaning in any cultural or systemic sense from the victims’ vantage point: the destruction of a factory one day meant only that inmates had to carry cement there the next.30 Time—in Holocaust testimony—was reduced to one event following another, and the conception of space to a specific site of specific toil. The women might remember German words for their work, such as “Bauarbeit”; but any other cognizance of overall SS plans consisted only in the endurance of daily brutal labor. One thing that does emerge clearly is that for many, the last year of the war took place on an endless construction site.

III. The Digital Map
Both my analysis of the SS plan for Auschwitz as well as my focus on the testimony of Bela Korn indicate how important our attention to time is in understanding the architecture of the Holocaust. The temporal dimension is crucial, for it both links and separates the two kinds of evidence. For the SS, temporality rested on the relationship of present actions to future ambitions (an integrated if tense relationship). Its conception of time thus paralleled its conception of space, which related plans for a particular camp to the overall camp system. But, for the victims, as we have seen, such a systemic and holistic sense of time and space was irrelevant; in testimonies time exists in the present only, even as fragments of moments, just as spaces and structures are not wholes but parts: walls, plazas, corners. The perpetrators manifested synthetic notions of time and space; the victims emphasized phenomenological and fragmented experience. How then do we talk about the two competing temporal and spatial plans and experiences together?

A digital animation—here as three stills—of construction at Auschwitz in 1943 and early 1944 may help illustrate issues raised by the SS plan of 1942 and later Korn’s testimony regarding 1944 and 1945 (figs. 5). As does the camp system map in fig. 4, this animation resulted from my ongoing work with Anne Kelly Knowles analyzing spaces of the Holocaust through digital mapping and other visualizations. Our Auschwitz project “reconstructed” the buildings at the site in order to determine what the built environment might tell us about the Holocaust. Chester Harvey developed a database of 1400+ structures at the site. These included both monumental buildings such as the Entrance Pavilion at Birkenau, and small vernacular structures such as a troop sauna
at the eastern end of Auschwitz I. The scale of SS ambition that we noted in the plan became more evident as we built the database.

Our animation highlights in particular the period of April 1943 to May 1944, which was especially important. Yet this period has not received the same attention from scholars as the early years of the camp and of its last months.31 This is not surprising, given the interests of Holocaust research. On the one hand, scholars have emphasized the perpetrators’ steady radicalization of antisemitic policy. Nazi policy escalated persecution into full-scale genocide with the deployment of the Einsatzgruppen in the East after the beginning of total war. These mobile killing formations were gradually replaced with killing centers, including Auschwitz, beginning in 1941. By 1942, genocide was decidedly not only a plan, but a reality for European Jewry, and it was an implemented policy in the death camps and at Auschwitz. Historians of the latter site tend to direct our focus to 1944 and the murder of over 400,000 Hungarian Jews, a horrific summer of death.32 Many survivor testimonies also focus on 1944 and the following months, given that the end of the war is closer to their memory; for many survivors, Auschwitz and its sub-camps mean 1944 and 1945. Jews incarcerated at Auschwitz before or early in the war survived in smaller numbers. I am generalizing, and there are exceptions, but the trend in historians’ accounts and survivors’ testimonies leaves a gap in the history of 1943, the gap between SS plans and survivor testimony that our animation addresses.

Our initial visualizations focused on making sense of the functional elements of the SS’s plans rather than its architectural goals. We sought to capture not only well-known major structures, but all structures. A digitally marked-up SS plan of the eastern corner of the main camp (Auschwitz I), conveys the multifunctionality of that space (fig. 6), including a variety of SS buildings: the home and garden of the Kommandant, troop housing and saunas, the Central Building Office, the slaughterhouse for the staff mess hall, and so on. It also includes inmate “spaces,” most notably the crematorium (which changed function several times, e.g., to bunker and back again), workshops, and barracks.33

This visualization (and the larger original from which it derives) presents important factors for a new analysis of Auschwitz. Surprisingly, it shows the lack of a rationally planned and controlled space, not the well-ordered world we might expect: it represents short-term plans that located a place of relaxation such as the sauna next to a food processing facility next to an on-again/off-again crematorium. This jumbling would be superceded by the long-term order and
rationality of Hartjenstein’s plan. Finally, and most important, they show the physical and visual intersection of the world of the perpetrator and the world of the inmate in 1943, a world in the process of construction. That the SS simultaneously developed long-term plans for this very space indicates the future-oriented thinking completely foreign to the inmates’ perspective.34

The process of construction, though, can only be inferred from the plan or from our digital reconstruction. Building-in-time is something we can describe only as related to, but outside of, these visualizations.35 The finalized animation gives us a very different and, I believe, radically new picture of that gap in our understanding of Auschwitz during late 1943 and early 1944, one

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*Figure 5a, b, and c. Construction activity at Auschwitz-Birkenau, May 1943–May 1944 (black shading indicates construction completed; dark grey indicates under-construction; light grey indicates planned or uncertain construction status); base animation Chester Harvey.*
that argues for attending to the architecture of the Holocaust as well as to the construction of those buildings. The animation is a simple visualization of our partial database of construction activity in Auschwitz-Birkenau, beginning in April 1943 and ending in May 1944, before the arrival of the Hungarian Jews. The black indicates that the construction had been completed and that the Central Building Office had conveyed the completed structure to the SS administration for use; dark grey spaces indicate that a building was under construction; light grey indicates planned or uncertain construction status.

The stills of the animation (figs. 5) very clearly capture two aspects of the development of the built environment of Auschwitz-Birkenau. First, they show the rapid expansion and growth of the physical scale of the camp. The spread of the finished black buildings marks the temporal and spatial conceptualizations of the space. In terms of Hartjenstein’s 1942 plan, what we see here in the spatial expansion is the ideological commitment of the SS to its twin goals of extending forced-labor and carrying out genocide. These goals required larger controlled spaces that were also
highly regulated, marked in the animation by the expansion of the camp, the organized rows of barracks, and the buildings filling out.

Yet, second, the animation shows how sporadic and chaotic expansion was over this year. There was no set pattern to the process of construction. Rather, SS ambitions faced constant challenges: the war, weather, and materials shortages, as well as their own tendency to waste manpower. The micro-, ever-changing, construction zone of Birkenau also points directly to the prisoners, those Jewish and non-Jewish inmates driven into this physically fluid and confusing environment. The digital images reveal building-in-time, also pointing to those thousands of prisoners whose daily existence was devoted to constructing that environment. The animation reveals both ambition and construction, long-term goals but also to the short-term experience of space and moment.

Another way of thinking about this intersection of temporal scales in space is by graphing the relationship between time and building. The graph here (fig. 7) is based on the same database as is the animation, only visualized differently. The graph shows how consistent construction activity was over this period—the Central Building Office was in a constant state of activity. The graph captures the daily scale of building, something so detailed that only visualization based on the database can help us see it. The peaks and valleys of the graph indicate the start/stop process of implementation. Buildings could be completed within a few weeks of planning, or shortages could stop construction for a period; or thousands of construction laborers could be diverted at any particular moment to other military or genocidal goals.

In addition to indicating the Central Building Office’s orders and adapting priorities, the graph also records the activity of prisoners in an ever-changing built environment. The peaks and valleys of this graph emphasize a constantly changing physical environment, one that was visually unpredictable and that made the prisoners’ experience ever more fragmented and random. The graph records the spaces that appear not in the polished plans and memoranda of the SS but in the testimony of survivors. Why would any survivor remember a plan, or have a total concept of a site, or understand the relation of one building to another? Indeed, our graph indicates that disjointed memories are not simply that which survives fifty years after the war; it more closely embodies the actual character and experience of space in the camp. In a world of construction, physical violence, and constantly adjusted plans and ambitions, the fragmented descriptions of spaces and experiences in Bela Korn’s and other survivors’ testimony are the most accurate.
The digital visualizations help us to consider anew our historical sources. But they also bring us back to the question of an “integrated history” posed at the beginning of this presentation. The graph and the animation are, of course, abstractions. They do not establish the reality, any more than any other computer environment. The code, the database structure, and indeed the projecting machine itself are just part of the mediating role played by the digital environment in which we have reduced human actions and experiences to pixels and bytes.37 These partial representations, though, still show the indexical power of the digital environment when used for historical analysis: they refer to real plans, actions, and experiences.38 They mark the traces of history and give them form, both preserving the resonance of the overall plan of the SS, and also indicating the daily experience of the built environment and the forced-labor construction of the Jewish inmates; they make us ask questions of both, but do not reduce one to the other. The victim and perpetrator are spatially related, and that relational moment of their physical confluence signals as well their relational history. Through visualizing the architecture of the Holocaust as building-in-time, we critique a monolithic view of the long-term goals of the SS by showing their need to build step by step, brick by brick, cement bag by cement bag. We also recover more clearly the traces of the inmates’ experiences of forced labor, validating and contextualizing survivors’ testimony. The digital is not a replacement for analysis of documents or testimonies; it merely gives form to their relationship and shows one way we can talk about systemic and individual Holocaust together.
IV. Conclusion
What I have tried to show here is how looking at construction can not only change our analysis of the built environment but give greater complexity to an integrated history of the Holocaust. Architecture as process here could be a unique resource for Holocaust studies as we become more interested in a diverse set of spaces, from ghettos to camps, from front lines to bombed cities, from postwar courtrooms to living-room recollections. Digital methods have been important here, but only as part of this broader humanistic project. Attending to architecture not only gives us a side history but directs our attention to a central component of the overall implementation and experience of the Holocaust. If we do not attend to questions raised by the seam in the wall at the entrance of Auschwitz-Birkenau we risk losing sight of fundamental characteristics of the perpetrator; but we also risk losing parts of the terrible experience of forced labor in construction by thousands of victims. The trace of their experience, which resonates in the testimony of many women survivors, must be remembered and analyzed; visualization of building-as-process takes us to that end.

NOTES

3 Relational thinking has long been a hallmark of analysis within the Marxist tradition. In art history, a foundational attempt to explicate and argue for relational history can be found in Arnold Hauser, The Philosophy of Art History (London: Routledge, 1959). The German original was published in 1958.
4 A summary of the various positions within digital humanities can be found in Matthew K. Gold, ed., Debates in the Digital Humanities (Minneapolis: The University of Minnesota Press, 2012). Gold is currently working on a second volume of this project. For the hybrid online version, see: http://dhdebates.gc.cuny.edu/, accessed August 18, 2016.
6 In this formulation, I am particularly influenced by the work on pattern formation by Alan Turing. See also Philip Ball, “Forging Patterns and Making Waves from Biology to Geology: A Commentary on Turing


10 Note, e.g., the spatial emphasis of both genocide and labor in the draft summary of a meeting with Kammler, Hoess, Bischoff and others, 21 May 1943: “Es [das Lager] erwies sich die Grenzlage zwischen Reich und G.G. wegen der sich immer wieder zusitzenden Lage als besonders günstig, da die Füllung des Lagers mit Arbeitskräften gewährleistet war. Dazu kam in letzter Zeit die Lösung der Judenfrage, wofür die Voraussetzung für die Unterbringung von zuerst 60.000 Häfling[e illegible] innerhalb kurzer Zeit auf 100.000 anwachst.” Microfilm copy of the original from the Russian State Military Archive collection in U.S. Holocaust Memorial Museum (USHMM), RG-11.001M.03, reel 20, 502-1-26.

11 See in particular Dwork and Van Pelt’s discussion of the activity of the Central Building Office. The remaining archival records (including drawings) of the office are available on microfilm at USHMM, RG 11.001M.03.


14 USHMM, RG 11.001M.03, reels 19 and (continued) 20: 502-1-24, various monthly reports.

15 USHMM, RG 11.001M.03, reel 22, 501-1-60, esp. reports from July 1942 and January 1944. By mid-1943, a period of sustained building activity that included work for Krupp and other armaments firms, the number of prisoners in construction consistently remained more than 10,000 per month, in all kinds of projects (see Piper, *Arbeitseinsatz*). Numerous drawings survivors in the Archive of the State Museum Auschwitz-Birkenau in Oświęcim also attest—to substituting prisoner numbers for names—to the use of forced-labor architects. See, for example, the many drawings for SS housing and housing additions in the BW (Bauwerk) 36 files: KL Auschwitz I, BW 36/1-5/1-50.

16 *The United States Holocaust Memorial Encyclopedia of Camps and Ghettos*, vol. 1, pts. A and B.


20 The formulation was originally Langer’s, but is developed as well in Shenker, *Reframing*, esp. 5–7.


22 As Shenker notes, the VHA testimony structure is based on the assumption of a “common” memory following a common chronology; divergent elements have to be inserted where possible by the interviewee (Shenker, 124–28).
Selecting a representative set of testimonies is a difficult task, given the scale of the VHA database. For this study, I searched the terms “Auschwitz,” “construction,” and “women” within the European Holocaust 1939–1945 dataset. I limited the results to those that mention all three terms within five segments, as I was attempting to capture the terms as they were brought up together. This resulted in seventy–nine segments (seventy of which were in English) from twenty-six survivors. These form the core of the testimonies analyzed here.


Sally Belfer, testimony #21,181, tape 4, segment 27.

Balla [sic] Korn, testimony #4153.

Ibid., tape 3, segment 18.

Shenker in particular discusses how the VHA testimonies are influenced by concepts of Hollywood narratives such as *Schindler’s List* (1993), notably in his analysis of the structuring mechanisms of the archive and his critique of the framework guiding the testimonies (Shenker, 112–13).

In a different context, see my analysis of construction and the war in “Building the Nazi Economy: Adam Tooze and a Cultural Critique of Hitler’s Plans for War,” *Historical Materialism* 22 (2014), nos. 3–4: 312–29.

See, e.g., Rose Lazaar, testimony #30,721, segment 17, on the relation of construction to destruction as a dynamic during the last year of the war.

See, e.g., Gutschow, *Ordnungswahn*, whose analysis ends with the conclusion of a master plan for the site in spring 1943.


For the original drawing, see USHMM, RG 11.001M.03, reel 34, 502-1-227.

Notably, Trachtenberg’s formulation “building-in-time” tends to be about the long process or life of an individual building. The digital project here, though, allows for that conception to be expanded to hundreds of buildings of the entire site, something almost impossible without digital methods. Cf. Trachtenberg, *Building-In-Time*.

See, for example, 1942–1944 the Zentralbauleitung documents related to shifting labor assignments, indicate the flurry of activity and changing demands: USHMM, RG 11.001M.03, reel 21, 502-1-46.

Todd Presner speaks to this point particularly well in Todd Presner, “The Ethics of the Algorithm: Close and Distant Listening to the Shoah Foundation Visual History Archive,” in *Probing the Ethics of Holocaust*

38 In a different context, see Bruno Latour and Adam Lowe’s discussion of how a digital reconstruction of a Veronese painting enhances and engages with its original historical space, in Bruno Latour and Adam Lowe, “The Migration of the Aura, or How to Explore the Original through its Facsimiles,” in Switching Codes: Thinking Through Digital Technology in the Humanities and the Arts, ed. Thomas Bartscherer and Roderick Coover (Chicago: University of Chicago Press, 2011), 275–97.
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