

IG Farben, which founded the city to begin with, now gives it more than ever the pure, raw-cold, fantastic face of late capitalism. [...] This is a good standpoint from which to see current reality, to grasp even better the tendency [...].

Ernst Bloch, Ludwigshafen–Mannheim (1928)

The picturesque, late-capitalist scenery below (fig. 1), nestling along the river Rhine, depicts the sprawling chemical works – 5.3 by 1.7 kilometers – of the Badische Anilin- und Sodafabrik Aktiengesellschaft (BASF) in Ludwigshafen, in or around 1965. «As an integrated unit», a contemporary account keenly pointed out, «it form[ed] the largest chemical factory compound in Europe», comprising some 1,500 factory buildings, fifty-seven kilometers of paved roads, six hundred and fifty kilometers of piping, and eight hundred kilometers of underground cabling. «Divided into rows of letters and numbered squares», much like some baroque planned city, by the late 1950s this site alone employed more than 41,000 people: 36,815 men, 4,320 women.¹ The chemical industry stood out by other measures, too, with no other industrial sector investing as much in plants, instrumentation, research; none exhibited more growth; none achieved higher productivity. «Day after day, a never-ending stream of products [left] the BASF», making, as the German weekly *Der Spiegel* noted every so often, for «tremendous business».² The industry churned out chemicals, lacquers, resins, fertilizers, and a myriad of other synthetic goods made from coal or, increasingly, from oil, supplying downstream producers from Lima to Singapore. Indeed, the consequences of this transition were «profound», as Carl Wurster, BASF's first postwar CEO, put it, the chief reason being «that the large petrochemical plants [were] almost fully mechanized».³

Also visible, slightly off-center and to the right, is a silvery presence extruding from the red brick below: building E-100, also known as the Friedrich-Engelhorn-Haus or, more affectionately, as simply the BASF-Hochhaus. Completed in 1957 and registering at 101.63 meters tall, it was for a few short years the tallest office high-rise in all of Germany. While paling in style and significance when compared to other instances of postwar corporate modernism, it nonetheless prompted substantial critical commentary. It was «automation [...] applied with perfection», as one journalist enthused; and it was evidence of a new kind of «humanitarianism in the office», too.⁴

Although there was «no precedent for this kind of high-rise building in Germany», BASF nonetheless had built an impressive *machine à travailler*:⁵ a 28-story office building accommodating some 2,000 people, replete with automatic elevators, the



1 «Werkteil Süd»: A postcard picturing BASF, Plant Section South, Ludwigshafen am Rhein, ca. 1965

latest telecommunications equipment, 1,200 permanently sealed windows, air-conditioning, state-of-the-art soundproofing and lighting, pastel-colored walls, and a stylish rooftop cafeteria overlooking the Rhine and the nearby Odenwald mountain range. As the lavishly produced booklet that BASF circulated for the building's opening matter-of-factly explained, the company's decision to build a high-rise was «in step with [our] return to the world market», further adding that «conditions in the administrative departments became increasingly difficult, so much so as to force twelve or even fourteen employees into very small rooms; the further growth of sales threatened to ultimately fail simply as a question of space.»⁶

Thanks to the voluminous literature on mid-20th-century corporate architecture, historians are fairly familiar not only with buildings such as E-100, but also with their economic logics and administrative *raisons d'être*.⁷ Any genealogy of the «user» will have to reckon with places such as E-100, perhaps the quintessential «post-industrial» spaces. This is partly because, as the former secretary (and future feminist) Erika Wisselinck observed at the time, this «new type of office» was an entirely new type of environment, one that came with its «own laws»: a place where people dressed better, drank Coca-Cola (not beer), spoke in hushed voices, and even arrived on time.⁸ (Or, in the technical language of the period: Such environments generated «open-plan-appropriate behavior» [*großraumgerechtes Verhalten*].)⁹ These profoundly artificial spaces also mattered because their inhabitants were increasingly likely to be exposed to machinery of one kind or another, ranging from the simple (say, light switches) to the complex (notably, data processing equipment), which brought in its wake another set of environmental problems, be it in the

«rational» design of office equipment (stationery, typewriters, telephones, and so on) or in the challenge of optimizing the «presentation of information».¹⁰ As such, the mid-century figure of the user, then being assembled from several converging trajectories of environmental design, psychophysiological science, and managerial control, was, by sheer virtue of the organizational capacities all this required, a correlate of modern large-scale industry – or, to pick up Bloch’s terminology above, of «late capitalism».

While the historical picture of these various trajectories remains sketchy and scattered across multiple literatures, it is this latter thread – that of the *industrial*, or more precisely the *industrial-bureaucratic* – that I wish to pursue in the following. My reasons are simple: I aim to complicate the historiographical tendency to align the emergence of the «user» with narratives of cybernetics, information theory, and the Cold War, but also wish to push back in architectural terms against the tendency to equate the postwar built environment with a one-dimensional imaginary of «post-industrialism» – offices, headquarters, laboratories, and the like – thereby relegating the world of production to a bygone, Taylorist age of heavy equipment and muscular workers. Seen this way, I hope to show, the case of BASF quite plainly overexposes a productivist (or infrastructural) logic otherwise kept out of frame. Indeed, as we shall see, E-100 and its peripherals – its cafeteria, its in-house mail department and telephone exchange, the adjacent AWETA research and development facilities (1960–1963) and BASF Rechenzentrum (1961–1964)¹¹ – were impressive in that they sat right in the midst of some of the most awe-inspiring material manifestations of «late» (or «organized») capitalism: a world of rationally managed flows both physical and informational, of intricate pipeline networks, and of eerily abstract, almost magical forms of production widely hailed at the time as the «avant-garde of automation»¹² and as a world of «abstract, imperceptible processes, mediated solely through instruments and gauges».¹³ Contemporary theorists coined many words for this wider constellation: John Kenneth Galbraith’s «technostructure», Adorno and Horkheimer’s «administered world» [verwaltete Welt], and Arnold Gehlen’s *post-histoire/Kristallisation*; the latter writer, as it happens, frequently wrote for BASF’s in-house magazine.¹⁴ It is perhaps not entirely surprising, therefore, that E-100 played an important role in shaping one of the more influential accounts in postwar German-speaking sociology: Hans-Paul Bahrtdt’s *Industriebürokratie* (Industrial bureaucracy, 1958), written based on fieldwork at BASF Ludwigshafen in the early/mid-1950s. Clearly betraying the strong impression the expansion of BASF’s administrative apparatus had made on the author, it advanced a vivid account of what Bahrtdt discerned to be the fading «manufacturing period» [*Manufakturperiode*] of clerical work and its incipient, technology-driven «industrialization».

In terms of the historiography of the «user», it would be tempting to simply fold this episode into the longer history of the office: a further mutation of white-collar sociology [*Angestelltensoziologie*] as it intersected with office mechanization and thus, with the mid-century «cybernetic moment».¹⁵ My point here, however, is that the «stereotypes of labor»¹⁶ that emerged from within and around BASF – or for that matter, adjacent to the «fantastic face of late capitalism» – suggest that the figure of the «user» as an information-processing subject emerged alongside and embedded in the material and spatial arrangements of continuous-flow production. Put differently, such a reading would place the figure of the «user» within the story of the «great acceleration».¹⁷

1) E-100: Work Climate

As noted in *Wärme Kälte Schall. Mitteilungen aus der Isoliertechnik*, the in-house magazine of Grünzweig & Hartmann AG (which was also based in Ludwigshafen), the BASF-Hochhaus was a «pure reinforced-concrete construction» and thus required well-considered thermal engineering and «carefully considered soundproofing measures».¹⁸ Grünzweig & Hartmann, a manufacturer of insulation materials – tiles, mats, pipe jacketing, and so on (fig. 2), had in fact consulted BASF on the finer details of thermal and acoustic engineering. The firm was generally thriving, too, owing in part to the postwar prevalence of «light-weight construction» [*Leichtbauweise*], a method, as they put it, «born from a mixture of technical progress and necessity» – though one that did not sit well with «the increased noise sensitivity» of the wider population.¹⁹

Such were the nuisances of the *Wirtschaftswunder*: «cinema, the portable radio, and the puttering motor scooter», as the young Jürgen Habermas mused with a nod to Karl Bednarik's *Der junge Arbeiter von heute – ein neuer Typ* (1953), a pioneering, popular portrayal of the new, confusingly non-proletarian generation of workers.²⁰ As is well known, the putative effects – on labor, leisure, and the psyche – brought about by the «automation age» would soon come to preoccupy postwar sociological thinkers, not least Habermas himself, who then still earnestly pondered such problems as «industrial design» or, for that matter, the «serviceability» [*Dienlichkeit*] of things.²¹ As for the many nuisances this diffusion of technical things invariably entailed, such problems were only exacerbated in Ludwigshafen, home, as noted, to some of the most advanced and automated production facilities anywhere in the world. Unsurprisingly, therefore, Helmut Hentrich and Hubert Petschnigg, the architects commissioned for E-100 in 1953 – they would go on to design many more memorable buildings, including West Berlin's Europa-Center and the Ruhr-Universität – made sure the BASF-Hochhaus would keep its cool, climatically speaking. «Not even the typewriters next door could be heard clattering», the BASF employee magazine marveled, «nor an elevator humming. The walls were genuinely soundproof. And the thermometer read a constant 21 degrees Celsius. [...] Without question, a maximum of functional efficiency [*Zweckmäßigkeit*] has been achieved.»²²

As a marvel of environmental engineering, E-100 was also an oversized BASF showroom of sorts – a test field [*Versuchsfeld*], in the words of Camill Santo, BASF's trusted construction director [*Baudirektor*].²³ «It goes without saying that in the interior work – wherever possible – the construction materials and auxiliary building supplies originating from BASF's own product lines were used.»²⁴ This included OPPANOL



2 «Insulation»: Grünzweig + Hartmann AG, Ludwigshafen, advertisement (1960)

BA-Folie, Styrofoam, various kinds of acoustic tiles, linoleum and «linoleum-like» plastic tiles, asbestos tiles, thermoplastic resins, rubbers, Lupolen (suitable for sheathing «telephone, high-frequency, and power cables»), and «Thermopan» windows – the latter serving as sound insulation from the noisy surroundings. It also kept out air, which naturally was «much worse outside than inside». The adjacent laboratories of AWETA, also built by HPP, needless to say, brought with them even more demanding construction challenges, partly because of the more stringent technical requirements and partly because they housed even more delicate brain workers.²⁵

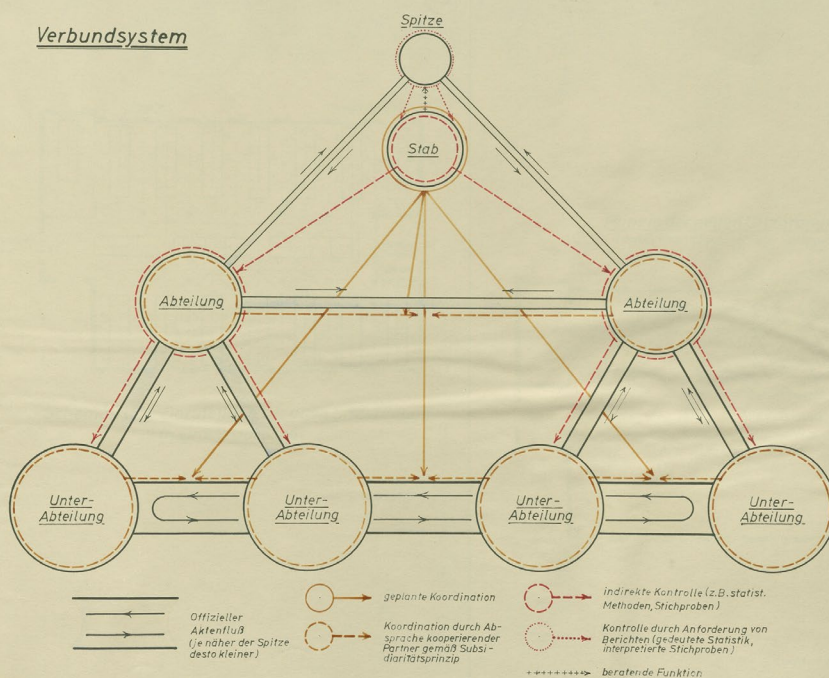
The vague outlines, then, not quite yet of the so-called «user» as such, but of a modern employee sensitive to the conditions of the working environment, are clearly visible here. The figure took shape in relation to what contemporaries called «work climate» [*Betriebsklima*], a notion perhaps most closely associated with the Frankfurt Institute for Social Research's study of the same name, better known as the «Mannesmann-Studie» after the Mannesmann company – which, incidentally, manufactured pipelines.²⁶ For its part, the broader language of *Betriebsklima* – a very vague term, as Adorno and Horkheimer themselves admitted²⁷ – offered a fairly eclectic toolset for construing the nature of working environments: a *mélange* of the more newfangled, imported vocabularies of «human relations», selectively merged with homegrown traditions of psychotechnic engineering. And it was a similar *mélange* of factors – the postwar productivity drive, questions of wage determination and co-determination, the residual patriarchy of management, a latent humanistic urge on the part of the younger generation of experts – that also brought Bahrtdt and his frequent collaborator Heinrich Popitz to Ludwigshafen, via the Sozialforschungsstelle Münster/Dortmund, then the undisputed center of West German industrial sociology.²⁸

2) Industrial Bureaucracy: Systems

The detailed circumstances of Bahrtdt and Popitz's BASF engagement remain murky, but it did, as a first outcome, produce a number of reports for internal use, including *Die Sozialstruktur eines Großbetriebes* (circa 1956). This latter report was essentially a reading list of mid-century social analysis (Jean Fourastié, John Diebold, David Riesman, and so on), accompanied by plenty of charts and diagrams: «evolution of white-collar employment», «income groups» (male, female), «income vs. age».²⁹ In addition, it contained ideas regarding office layouts, which may or may not have fed into the planning of E-100: «schematic representation of old seating arrangements» vs. «principle of new seating arrangements», for instance. And it also produced the diagram «Verbund» (fig. 3), which would duly resurface in Bahrtdt's book, where it served to underscore one of his key contentions: the emergence of the new logic of *Verbund* («composite» or «system»). The foil for this, in turn, was the entrenched, pyramidal, Prussian-style «hierarchy».³⁰ The new logic of *Verbund* was something else, something resembling, Bahrtdt thought, an «electrical circuit diagram».³¹ «Hierarchy», meanwhile, as Bahrtdt's book-length treatment *Industriebürokratie* (1958) would elaborate at length, was on its way out, a casualty of novel «aggregates» of men (and women) and machines, of the «industrialization of office work» – and notably of what Bahrtdt discerned as new kinds of horizontal assemblages [*horizontale Kooperationsgefüge*].³²

What did it mean? On one level, all this clearly resonated with the wider, period-specific, late-capitalist imagery: the technostructure, the large firm [*Großbetrieb*], the system, the pipelines, flowcharts, and so on. In Ludwig Erhard's Germany, this

Verbundsystem



3 «Verbundsystem», ca. 1956. Diagrammatic representation of various channels of control and communication within the modern *Großbetrieb*

did not always sit nicely with prevailing ordoliberal sensibilities. BASF CEO Carl Wurster, for instance, just having emerged from the (half-hearted) dismantling of IG Farben,³³ took pains to reassure his fellow Germans that the integrated production complex [*Verbundbetrieb*], much like economic «concentration», far from being a sinister capitalistic ploy, was a technological necessity, indeed a «natural and inevitable consequence of the great discoveries of the modern age».³⁴ On another level, it reflected Bahrdt's (and Popitz's) empirical bent, their deep concern with what Bahrdt elsewhere referred to as the «demystification of work»³⁵ – demystification by way of field research rather than grandiose Teutonic theorizing in the style of «late-bourgeois cultural pessimism», or worse.³⁶ Such self-restraint was modulated only by the fact that Bahrdt originally had obtained his PhD in «phenomenology».³⁷ It may explain his eye for detail, mixed with a dose of modernization-theory-esque optimism. Prefiguring later, more systematic surveys of office users, *Industriebürokratie* thus featured lengthy accounts of an array of IBM machines (sorters, collators, etc.) and even the first «electronic» computers, which brought along with them novel job profiles («punch-card girls», operators, system analysts, and so on). The book also touched on the ever more elaborate schemes of «document flow» [*Aktenfluß*], which had set off a veritable «paper war», in the words of BASF's employee magazine: «400,000 postings in the creditors' ledger [...] half a million sales invoices [...] as many telephone calls, telegrams, and telex messages [...] around two million pay slips, one million goods slips [...] 29 million punch-cards».³⁸ Bahrdt himself was particularly

impressed by some of the less conspicuous items and their effects – among them dictaphones, which enabled new kinds of spatial and temporal *Kooperationsgefüge*, notably «centralized typing pools». Or again, consider the lowly telephone: Though BASF prided itself on being an early adopter, obtaining a landline as early as 1882, the technology had become truly ubiquitous throughout the firm only in recent years.³⁹ This facilitated bypassing and sidelining upper levels of management, or so Bahrtdt thought, and even calling one's fiancé (or fiancée) from work and other such abuses. The employee magazine, for its part, also took note, somewhat tongue-in-cheek, of a new «chronic» disease afflicting certain employees: «telefonitis».⁴⁰

It was this proliferation of technologies that lent plausibility to the notion of «leveling» [*Nivellierung*], another *idée fixe* of postwar sociology, essentially implying that «blue collar» and «white collar» work converged. More precisely, it substantiated one trajectory within that hypothetical convergence: the evident trend toward the mechanization of mental labor, and hence its alleged «proletarianization» – a manifestly ideological construct that glossed over the gendered nature of office work, even as it undeniably identified phenomena that were quite real.⁴¹ For example, Bahrtdt had developed a keen eye for the new forms of «discipline» this entailed, the combination of expensive equipment and complex operations causing unprecedented kinds of psychic pressure (or «stress», in the newspeak of the postwar period). «No one wants to be responsible», as he mused, «for the crack in the vessel of a large-scale chemical apparatus run too hot – any more than for the chain reaction of accounting errors triggered by a wrongly wired Hollerith machine.»⁴² Even the higher-ups were not immune. Sitting somewhere at some desk at some node of the vast *Verbund*, Bahrtdt reasoned, «the «manager», the «boss», the «executive» typically did not even make any decisions anymore; he is now merely a petty signalman [*Signalwärter*].»⁴³

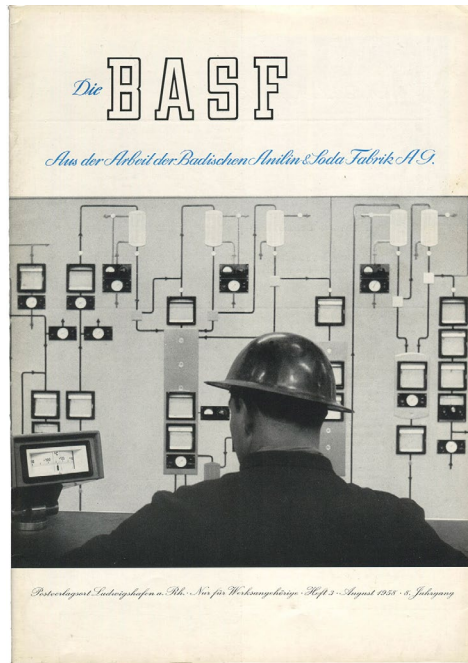
As Bahrtdt's language betrays – signalmen, exploding vessels, psychic discipline, *Verbundbetrieb* – the logic he discerned within BASF's administrative apparatus was not unique to the interiors of bureaucracy. It had its spatial and material correlates beyond office walls, ushering in so many investigations of the *new* worker as a machine-minder: applied psychologists studying such things as «vigilance» and «visual performance»; researchers in «industrial ergonomics» who worried about cluttered, badly designed control panels; product designers who took to dabbling in the language of «feedback», «display», and «information processing».⁴⁴ As regards the case at hand, the conceptual alignment with the imaginaries of the high-modern shop floor was not entirely accidental either: Alongside their coauthors Ernst August Jüres and Hanno Kesting, he and Popitz had just completed a major investigation on the steel industry. Published as *Technik und Industriearbeit* (Technology and industrial labor, 1957), it had sent them slightly up north, into the equally unpleasant environments of the Ruhr Valley. The study, which exhibited much of the same set of concerns that would animate Bahrtdt's *Industriebürokratie* a year later, was prompted by what they found in the field – including the fading class-consciousness on the part of the workers and some very modern (or «continuous») wide-strip rolling mills that had been spreading throughout Europe, largely thanks to Marshall Plan funds. In other words: yet more man-machine «aggregates» and hence, «work as conduct toward the technical object»; yet more «teams» and more «crisis of hierarchy»; and yet more questions pertaining to the «interplay of space and environment» and «temporal structure» in the work setting, but also to the user-friendliness, as it were, of machinery: «die Sinnfälligkeit der Maschine».⁴⁵ (Tellingly, perhaps, Kesting

would go on to join the faculty at the Ulm School of Design in 1958.)⁴⁶

With respect to said process of «leveling», the difference was that whereas the specter of proletarianization by way of mechanization loomed in the offices, on the factory floors things pointed upward (fig. 4). Tell-tale signs of this upward movement were not just the transistor radios, motor scooters, and new housing developments, but also the new forms of «technical sensibility» and «technical intelligence» that Bahrtdt et al. saw emerging from the postwar technological boom:⁴⁷ that is to say, the new kinds of «industrial skills» that were beginning to feature so prominently within the nascent postwar discourse on automation.⁴⁸ Unlike the older, muscular visions of the «human motor»,⁴⁹ these new skills were a matter of «perceptual performance», «decision-making», and «signal-seeking behavior» that correlated with ever more «complex» machinery.⁵⁰ Though this fairly rosy view on technological change had its detractors, much like adjacent sociological coinages – the «affluent» worker, the «managerial» revolution, «post-industrial» society – it had a certain visceral truth to it and quickly diffused outwards, beyond the expert discourses. As a *Der Spiegel* feature on «white collars» intoned in 1962, «the modern open-plan office resembles [...] the modern industrial plant»; it illustrated this startling resemblance with two side-by-side photographs,⁵¹ one showing an inside view of the Horten headquarters in Düsseldorf (a brand-new, US-style open-plan office), the other a semiconductor assembly line at Valvo, the German subsidiary of Philips. (The latter photograph also and exclusively showed female workers: not the best illustration of upward mobility, of course, though it still somehow radiated, we must assume, the idea of a cleaner, more sterile, more office-like future.)

3) Conclusion

Soon enough, of course, such visions of the automated future had begun to look dated, having frayed in the midst of the growing critiques of mindless consumption, sputtering growth, environmental destruction, and other «contradictions» of late capitalism.⁵² They then definitively unraveled in the crisis years of the 1970s, brought down by a more socially engaged and more activist generation of experts, who tended to advance a different, more varied cast of stereotypes of «work», among them the «subproletarian pariah stratum of migrant workers, women, and de-skilled German desperados», as Karl Heinz Roth put it in 1974.⁵³ While, needless to say, histories of machine use (or the use of buildings and infrastructure) would do well



4 A world of «abstract, imperceptible processes, mediated solely through instruments and gauges» (Bahrtdt): «automation work» at BASF, ca. 1958

to incorporate this extended range of laboring people, my point here was a slightly different one: not to expose the obvious – the exclusionary, naïvely optimistic stereotypes of automation work – but argue that the story of the so-called cognitive turn needs to be embedded in a different, or at least extended, storyline. In terms of the historiography of the ‘user’, the case of BASF’s E-100 suggests that it is not so much that the entrenched framings – cybernetics, digital media, the information-saturated, high-modern office – are wrong, but that they are incomplete. As the contributions by Christa Kamleithner and Reinhold Martin elsewhere in this issue show, it makes sense to think of these post- and para-industrial environs as «symbiotic»⁵⁴ with the human-made world at large: a world of infrastructural sprawl, energy flows, and production processes. The project of rendering legible the inhabitants of these artificial spaces had, for its part, enlisted not just the sociologists who featured so prominently here, but a much wider range of experts whose activities (in Europe at least) had begun to spread not through the tentacles of the Cold War military-industrial complex, but were being multiplied by the various agents of growth and productivity – EPA, OEEC, ILO, and their various local and national organs.⁵⁵ One type of place these experts thus invariably gravitated to was the intricate facilities that we barely think of as architecture at all: disorienting ‘ghost towns’ of silvery pipelines, places resembling (at least to the casual observer) some kind of «unearthly cathedral».⁵⁶ And arguably then, in terms of «grasp[ing] even better the tendency», as Bloch darkly pondered in *Heritage of Our Times*, a site such as BASF Ludwigshafen, as a central «node» within the mid-century acceleration, is every bit as revealing as the more conventional post-industrial icons: say, IBM or Olivetti.⁵⁷

Notes

1 Wissenswertes aus der BASF, Ludwigshafen 1957, p. 19, p. 59.

2 Ungeheure Geschäfte, in: Der Spiegel, 07.02.1966, no. 7, p. 47–59.

3 Quoted in: Konzernoptimismus und Geologenkleinmut, in: Zeitschrift für angewandte Geologie 6, 1960, no. 5, pp. 238–239, at p. 239.

4 Sara Stroux: Architektur als Instrument der Unternehmenspolitik, PhD thesis, ETH, Zürich 2009, p. 214; and see Philipp Sturm/Wolfgang Voigt/Bernhard Unterholzner: Zur Geschichte des Friedrich-Engelhorn-Hochhauses, 1953–2014, Ludwigshafen 2024, pp. 170–196.

5 Deutschlands höchstes Bürogebäude, in: Wärme Kälte Schall 2, 1957, no. 1, pp. 21–27, at p. 21.

6 Quoted in: Stroux 2009 (as note 4), p. 74.

7 There is now copious literature on the subject. See Michelle Murphy: Sick Building Syndrome and the Problem of Uncertainty. Environmental Politics, Technoscience, and Women Workers, Durham, NC 2006; Alexandra Quantrill: The Aesthetics of Precision. Environmental Management and Technique in the Architecture of Enclosure, 1946–1986, PhD thesis, Columbia University, New York 2017; Avigail Sachs: Environmental Design. Architecture, Politics, and Science in Postwar America, Charlottesville

2018; Jens van de Maele (ed.): Behind Office Doors. Use and Users in the History of Office Buildings, Leuven 2026.

8 Erika Wisselinck: Über den Wandel des Lebensstils – im Büro und zu Hause, in: Mensch und Arbeit 10, 1958, no. 6, pp. 162–164 passim.

9 Friedrich Weltz: Bürogroßraum. Ergebnisse einer soziologischen Fallstudie, Frankfurt am Main 1966, p. 133.

10 On the former, see Jason Puskar: The Switch. An Off and On History of Digital Humans, Minneapolis 2023; on the latter, see John Harwood: The Interface. IBM and the Transformation of Corporate Design, 1945–1976, Minneapolis 2012.

11 AWETA stands for Anwendungstechnische Abteilung (application engineering department); on the Rechenzentrum, see BASF Rechenzentrum, Stuttgart 1965.

12 Most famously perhaps, based on fieldwork in the late 1950s on the Caltex refinery at Ambès: Serge Mallet: La nouvelle classe ouvrière, Paris 1969 (1963).

13 Hans Paul Bahrdt: Automation – Konsequenzen der veränderten Berufsstruktur, in: Günter Friedrichs (ed.): Automation. Risiko und Chance, Bd. II, Frankfurt am Main 1965, pp. 1035–1054, at p. 1036.

- 14 For example, Arnold Gehlen: Bürokratisierung, in: Die BASF 5, 1955, no. 3, pp. 125–131.
- 15 Ronald Kline: The Cybernetics Moment. Or Why We Call Our Age the Information Age, Baltimore 2015.
- 16 For a theoretically more mature Bahrdr, see Hans Paul Bahrdr/Horst Kern/Martin Osterland et al.: Zwischen Drehbank und Computer, Reinbek 1970, p. 10.
- 17 For similar tendencies, see Nils Güttler: Nach der Natur. Umwelt und Geschichte am Frankfurter Flughafen, Göttingen 2023, pp. 197–198; Esther Leslie: The Rise and Fall of Imperial Chemical Industries. Synthetics, Sensism and the Environment, London 2023; Roland Meyer: Navigation im erweiterten Raum. Informationsarchitekturen um 1970, in: Moritz Gleich/Christa Kamleithner (eds.): Medium unter Medien. Architektur und die Produktion moderner Raumverhältnisse, Boston 2023, pp. 279–299.
- 18 Wissenswertes 1957 (as note 1), pp. 22–23.
- 19 Schall, in: Wärme Kälte Schall 13, 1968, no. 4, p. 35, at p. 35.
- 20 Jürgen Habermas: Die Dialektik der Rationalisierung, in: Merkur: Deutsche Zeitschrift für europäisches Denken 8, 1954, no. 78, pp. 701–724, at p. 702.
- 21 These essays show Habermas beginning to develop an interest in the concept of «interaction»: see Jürgen Habermas: Der Moloch und die Künste. Gedanken zur Entlarvung der Legende von der technischen Zweckmäßigkeit, in: Frankfurter Allgemeine Zeitung, May 30, 1953, p. 20; idem: Die letzte Phase der Mechanisierung, in: Frankfurter Allgemeine Zeitung, January 8, 1955, p. BuZ5.
- 22 Hermann Seyboth: Besichtigung des Hochhauses, in: Die BASF 7, 1957, no. 3, pp. 112–119, at pp. 114–115.
- 23 Camill Santo: Beläge im Hochhaus, in: Die BASF 7, 1957, no. 3, pp. 121–124, here p. 124; on Santo, who had been involved in the planning of IG Farben's Buna-plant at Auschwitz, see Stroux 2009 (as note 4), pp. 98–99.
- 24 Camill Santo: Das Friedrich-Engelhorn-Haus, in: Die BASF 7, 1957, no. 3, pp. 98–107, at p. 105.
- 25 They brought yet more paperwork, too: AWETA, comprising eleven subdivisions, went up from 407 employees in 1947 to 2,114 by the end of 1961, by which time it was processing «100,000 letters of inquiry from customers annually». See Institut für Bauplanung und Bautechnik: BASF-Laboratoriumsbauten der Anwendungstechnik, Detmold 1963, p. 10 passim.
- 26 On the study, see Theodor W. Adorno/Walter Dirks: Betriebsklima. Eine industriesoziologische Untersuchung aus dem Ruhrgebiet, Frankfurt am Main 1955.
- 27 Max Horkheimer: Menschen im Großbetrieb, in: Deutsche Zeitung, 19.02.1955, p. 14.
- 28 See Jens Adamski: Ärzte des sozialen Lebens. Die Sozialforschungsstelle Dortmund 1946–1969, Essen 2009.
- 29 Die Sozialstruktur eines Großbetriebes (BASF), Folder 3.7.3, Nachlass Heinrich Popitz, Sozialwissenschaftliches Archiv Konstanz.
- 30 See Hans Paul Bahrdr: Industriebürokratie. Versuch einer Soziologie des industrialisierten Bürobetriebes und seiner Angestellten, Stuttgart 1958, pp. 64–65.
- 31 Hans Paul Bahrdr: Die Krise der Hierarchie im Wandel der Kooperationsformen, in: Alexander Busch (ed.): Soziologie und moderne Gesellschaft, Stuttgart 1959, pp. 113–121, at p. 116.
- 32 Bahrdr 1958 (as note 30), p. 2 passim.
- 33 On the «disincorporation», see Werner Abels-hauser/Wolfgang von Hippel/Jeffrey Johnson et al.: German Industry and Global Enterprise. BASF: The History of a Company, Cambridge 2003, pp. 367–376.
- 34 Carl Wurster: Der Grossbetrieb, in: Die BASF 9, 1959, no. 1, pp. 25–27, at p. 25.
- 35 Hans Paul Bahrdr: Entmythologisierung der Arbeit, in: Zeitschrift für Evangelische Ethik, 1965, no. 1, pp. 35–47.
- 36 Heinrich Popitz/Hans Paul Bahrdr/Ernst August Jüres et al.: Technik und Industriearbeit. Soziologische Untersuchungen in der Hüttenindustrie, Tübingen 1957, p. 4, p. 8.
- 37 Wolfgang Eckbach: Politische Fraktionen, wissenschaftliche Strömungen, in: Oliver Römer/Ina Alber-Armenat (eds.): Erkundungen im Historischen. Soziologie in Göttingen, Wiesbaden 2019, pp. 351–376, at pp. 355–356.
- 38 Walter Eginhard: Der Papierkrieg des Kaufmanns, in: Die BASF 9, 1959, no. 3, pp. 88–90, at p. 90.
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- 40 Rudolf Schneider-Schelde: Telefonose und Telefonitis, in: Die BASF 7, 1957, no. 1, n.p.
- 41 Bahrdr himself cautioned that things were more complicated than simple «convergence», see Bahrdr 1958 (as note 30), p. 3; more broadly, see Johannes Platz: «Die White Collars in den Griff bekommen». Industrieangestellte im Spannungsfeld sozialwissenschaftlicher Expertise und gewerkschaftlicher Politik, in: Archiv für Sozialgeschichte 50, 2010, pp. 271–288.
- 42 Bahrdr 1958 (as note 30), p. 100.
- 43 Hans Paul Bahrdr: Fiktiver Zentralismus in den Grossunternehmen, in: Kyklos 9, 1956, no. 4, pp. 483–491, at p. 484.
- 44 See Michael Pettit: Governed by Affect. Hot Cognition and the End of Cold War Psychology, New York 2024, chapter 4; Roland John Edwards: «Machines and People». The Evolution of Industrial Ergonomics in the Mid-Twentieth Century, PhD thesis, University of Manchester, Manchester 2017.
- 45 Popitz et al. 1957 (as note 36) passim.
- 46 See Ulm 1, Vierteljahresbericht der Hochschule für Gestaltung, Ulm 1958, p. 10. Kesting, though, would soon move on again, eventually to RWTH Aachen.

- 47 Popitz et al. 1957 (as note 36), pp. 191–198.
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- 49 Anson Rabinbach: *The Human Motor. Energy, Fatigue, and the Origins of Modernity*, Berkeley/Los Angeles 1992.
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- 52 Jürgen Habermas: *Legitimationsprobleme im Spätkapitalismus*, Frankfurt am Main 1973.
- 53 Karl Heinz Roth: *Die «andere» Arbeiterbewegung*, München 1974, p. 251.
- 54 On this notion, see Jean-Baptiste Fressoz: *More and More and More. An All-Consuming History of Energy*, London 2024, pp. 8–9.
- 55 See, for example, European Productivity Agency: *Fitting the Job to the Worker*, Paris 1960.
- 56 Quoted in Hilde Rubinstein: *Reisenotizen 1954*, in: *Frankfurter Hefte* 12, 1957, no. 3, pp. 183–191, at p. 183.
- 57 Ernst Bloch: *Heritage of Our Times*, Berkeley 1991 (1935), pp. 193–194. «Node» is my own rendering of «Knotenpunkt»; the 1991 translation by Neville Plaice and Stephen Plaice uses «knotting point».

Image Credits

- 1 Postcard, BASF 1865–1965 (1965) / aerial photograph «Freigegeben vom Innenministerium Baden-Württemberg, Nr. 10/728», author's collection.
- 2 *World Petroleum Report*, vol. 6, 15 February 1960, New York, p. 213.
- 3 *Die Sozialstruktur eines Großbetriebes* (BASF), folder 3.7.3, Nachlass Heinrich Popitz, Sozialwissenschaftliches Archiv Konstanz, appendix, C2.
- 4 *Die BASF: Aus der Arbeit der Badischen Anilin- & Soda-Fabrik* 8, August 1958, no. 3, cover.