

# What's so basic about basic design?

Matthew Kennedy

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1 Huff, Williams S. "An Argument for Basic Design." From *ulm* no. 12/13, 1965. p. 25–36.

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2 What has [V-G's] work to offer to architecture? A new dynamism! Symphonic architecture! I do not yet know — but I propose to find out." From a draft of Huff's Fulbright Scholarship application essay, 1955. Courtesy, University Archives, University at Buffalo, The State University of New York.

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3 A series of letters, held at the University Archives of the University at Buffalo, SUNY, to well-connected professors in Ulm and Stuttgart, including Hans Gugelot at the HfG, Huff tried desperately to appeal for some manner of advanced standing at the HfG by merit of his previous education, in order to be given the freedom to pursue his proposed course of study under "V-G." Despite his objections,, he admitted in one such letter that "I am sure there are many things of value I might learn in the *grundlehre*."

"To design... is first of all to structure, and for me the study of structure (in the abstract) is the equal of that which has been known as basic design or foundational studies."<sup>1</sup>

In the summer of 1957, William S. Huff returned to the United States a changed man. At the age of thirty, he had just completed a year-long stint at the Hochschule für Gestaltung (HfG) in Ulm, West Germany, then in just its fourth year of operations. Having received his architectural training at Yale under the likes of Neutra, Johnson, and Kahn—having already become a registered architect, in fact—Huff had secured a Fulbright scholarship to go to the HfG to study with the German constructivist painter Friedrich Vordemberge-Gildewart, who had joined the school's faculty in 1954. His ambition? To discover "a more fruitful means of translating the two-dimensional experimentation of constructivist painters into three-dimensional architecture."<sup>2</sup> It was only grudgingly, then, that Huff acquiesced to the HfG's insistence that he participate instead in the school's obligatory *Grundlehre* (foundational course), then in its second year under the direction of Tomás Maldonado, the dynamic Argentinian theorist and designer who would

become one of the school's most influential figures.<sup>3</sup> But the rigor of Maldonado's curriculum, coupled with the intensity of the HfG's intellectual and political climate throughout this period, proved to be an enormously galvanizing experience for Huff. Only a few years after his return, he embarked on what turned out to be a lifelong career in architectural pedagogy, the bulk of which spent exploring the boundaries of what has become more broadly known as *basic design*, a designation Huff himself eventually came to regard as something of a misnomer.

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One would be hard pressed to overstate the impact of the Bauhaus on how design was taught in the twentieth century. Of the school's myriad pedagogical contributions, the so-called *Vorkurs* remains arguably the most radical and widely emulated. The obligatory year of preliminary instruction, built around compositional exercises that were at once exceedingly rigorous and radically abstract, evolved with startling intensity over the course of the school's short, tumultuous existence. The course was taught in markedly different ways by a succession of seminal instructors: Johannes

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4 Guerri, Claudio F. and William S. Huff. "Analyses of the Bauhaus's Preliminary Course Under Its Three Masters," VIII Congress of the International Association for Semiotic Studies (IASS-AIS), Lyon, France, 2004.

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5 Huff, Williams S. "An Argument for Basic Design." From *ulm* no. 12/13, 1965. p. 25-36.

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6 In this endeavor, Moholy-Nagy leaned heavily on the aid of Hin Bredendieck, a former Bauhaus student and eventual founder of the Department of Industrial Design at Georgia Tech.

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7 At the Bauhaus, there was no need for Albers to teach color as part of his *Vorkurs*, since this was an area of instruction that Klee and Kandinsky had taken upon themselves. At Black Mountain and Yale, he began developing sophisticated studies with his students in tandem that informed later, seminal works like his series of paintings, "Homage to the Square," and his book *Interaction of Color* (1963).

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8 Huff, Williams S. "Grundlehre at the HfG: A Focus on 'Visuelle Grammatik.'" From *Space Tessellations: Experimenting with Parquet Deformations*. Basel: Birkhäuser, 2022. p. 65-89.

Itten (1919-23), whose approach was rooted in the unapologetically emotional expressionism and the generation of "contrasts"; László Moholy-Nagy and Josef Albers (1923-28), who began integrating new tools (notably the camera), a preoccupation with light, shadow, and transparency, as well as a distancing of the curriculum from Itten's expressionism; and finally Josef Albers as sole instructor (1928-33), whose tenure shifted the course as close as it had yet come to the pursuit of "form that exists for its own sake."<sup>4</sup> Despite these shifting priorities, the *Vorkurs* nonetheless managed to achieve a certain consistency of effect: to destabilize newly arrived students' expectations of what it meant to create ("unlearning," in Itten's parlance), to disabuse them of previous points of cultural reference, and to disorient them sufficiently that their thinking might be more effectively restructured around form, light, color, texture, and other perceptual concerns.

Versions of the *Vorkurs* would go on to be implemented by admirers of the Bauhaus's paradigm-shifting reputation throughout the world, and in some cases even implemented by programs who attested to resist the tenets of the Bauhaus model.<sup>5</sup> Most importantly, its lessons were also carried forward, probably to more pronounced effect, by many of the instructors and students who were scattered by the school's closure in 1933, who went on to teach in (and in some cases, to establish from the ground up) forward-thinking programs of design education throughout the world. Indeed, far from being a settled matter, experimentation with the substance of what would, in time, become more broadly known as "basic design" continued at the various self-proclaimed successors to the pedagogical legacy of the Bauhaus (more than one of which had the advantage of being publicly "blessed" by Walter Gropius). Moholy-Nagy built upon his earlier curriculum in Chicago, first as director of the "New Bauhaus" (1937-38) and later at the School of Design (founded 1939, now the

Institute of Design at Illinois Institute of Technology), where he oversaw a more tactile, materials-oriented "basic workshop" until his premature death in 1946.<sup>6</sup> Albers, meanwhile, continued what would prove to be a lifelong engagement with basic design—with notably fixations on color theory, Gestalt principles (especially the differentiation of "figure-ground"), and articulated surfaces—first at Black Mountain College (1933-49), and later Yale University's Department of Design (1950-58).<sup>7</sup>

In August of 1953, Albers (along with Walter Peterhans and Helene Nonné-Schmidt) took up a visiting lecturer position at the newly established HfG Ulm. Max Bill, founding rector of the HfG and a former Bauhäusler himself, had opted to base much of the new school's curriculum on that of its famous predecessor, and had subtly rebranded their year-long basic course as the *Grundlehre*. It was the job of Albers, Peterhans, and Nonné-Schmidt to help orient the HfG's inaugural cohort vis-a-vis a series of preliminary exercises, after which Bill and other HfG faculty took over for the bulk of the year. This system was repeated the following year (1954-55), by which time Maldonado had joined the faculty. He would go on to oversee the *Grundlehre* curriculum beginning in 1955-56. Though his approach was justifiably most indebted to Albers, whose lessons he had the advantage of observing firsthand, Maldonado gradually integrated lectures on the newest developments in topics including symmetry, topology, semiotics, and ergonomics into the *Grundlehre* curriculum (though these were always kept separate from the exercises themselves). This was, notably, a break from Albers's previous insistence that to inject outside bodies of knowledge into the basic design curriculum would undermine the output (Albers famously discouraged his students from reading books during their participation in the *Vorkurs*).<sup>8</sup>

It was this most contemporary and theoretically rich interpretation of basic design that Huff encountered upon

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9 Spitz, René. The View Behind the Foreground: The Political History of the Ulm School of Design, 1953–68. Stuttgart / London: Edition Axel Menges, 2002. p. 192–278. In April 1956, the founding rectorship of Max Bill—which had been marked by a confrontational style that garnered no small amount of internal friction—came to an end, and leadership of the HfG was assumed by a governing board consisting of Maldonado (chair and acting rector), Otl Aicher, Hans Gugelot, and Vordemberge-Gildewart. Bill continued to direct the Department of Architecture, and the entirety of the 1956–57 academic year was dominated by a bitter dispute between Bill and the governing board together with Geschwister-Scholl-Stiftung. Bill left in Summer 1957, after which Maldonado and Aicher redirected the HfG to break away from the existing Bauhaus-based curriculum, and dispense with the heroic “genius artist” figure in favor of a new concept of the designer as a socially-committed, technically-proficient, collectively-driven operator. Amidst the debate over the future of the school, Huff arrived in September 1956 and became among the most vocal proponents of the “Ulm model” outside of Europe, and a crucial bridge for former students and faculty in North America in the 1960s.

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10 The president of the Tribune-Review was a relation of Huff’s, and it was at his request that Kahn accepted the commission and, if Huff’s letters are accurate, entrusted a greater deal of the design work to the younger architect than was typical in the practice.

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11 “Grundlehre at the HfG,” p. 85.

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12 It is worth noting that Huff was not the only “Ulm-mer” to prioritize architectural pedagogy in the United States. The Swiss architect Olivio Ferrari, who had been among the eight students to depart from Ulm in 1957 to complete their studies with Max Bill in Zurich — and could therefore be understood as the product of a very different HfG and mode of architectural thought — went on to be among the most influential figures in the formation of the College of Architecture and Urban Studies at Virginia Tech from 1965 onward.

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13 “Grundlehre at the HfG,” p. 84.

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14 “Grundlehre at the HfG,” p. 80.

arriving in Ulm in September of 1956. Quite by accident, Huff would locate in Maldonado’s teaching everything he had hoped to discover in the work of Vordemberge-Gildewart: namely, a set of lucid compositional principles from which to attempt to suss out new forms of architecture. It is clear from later developments that Huff’s responses to these exercises must have left a strong impression on Maldonado (more on this later). It is equally evident that Huff became utterly convinced of the merits of his teacher’s pedagogical approach and theoretical position, a conviction that may have owed as much to Maldonado’s leadership through what proved to be the most turbulent year of the HfG’s brief history as it did with the efficacy of the *Grundlehre* exercises to the teaching, or the production, of architecture.<sup>9</sup>

From 1958 to 1960, Huff worked full time in the Philadelphia office of Louis Kahn, where he dedicated most of his time to developing the headquarters of the Tribune-Review newspaper in Greensburg, Pennsylvania (1958–62).<sup>10</sup> At the same time, he began a campaign to generate interest in the establishment of a basic course in the mold of Maldonado’s *Grundlehre* in the School of Architecture at Yale, but by this juncture Josef Albers had firmly established himself in the adjacent School of Art, and had even been induced in 1957 and ‘58 by Paul Schweikher, then chair of the architecture program, to teach a course in “structural organization” (which, according to Huff, differed from Albers’s typical basic course in name only).<sup>11</sup> Huff’s proposed program may well have been deemed redundant by the school’s leadership from the outset—they already had arguably *the* seminal innovator of the Bauhaus *Vorkurs*; why would they need a *Grundlehre*, too? Not yet defeated, and with Kahn’s encouragement, he developed a Maldonado-indebted syllabus and proposed to teach a basic course himself at the University of Pennsylvania, but was met with indifference from the administration despite his famous mentor’s backing. Finally, in 1960, Huff got

the opportunity he had inadvertently sought out: he was contacted by Schweikher, who had just accepted a position as head of the School of Architecture at Carnegie Institute of Technology, in Huff’s native Pittsburgh. An instructor at Yale when Huff was completing his thesis, Schweikher was familiar with the younger man’s thinking, and with the fact that he had studied at an increasingly famous HfG. Now, ostensibly having heard about his former student’s failed proposal for a basic course at Penn, Schweikher offered Huff a place on the faculty at Carnegie, and with it, finally, a chance to bring the *Grundlehre* to America, though quite contrary to his original intent, and at the considerable expense of his own time and energy. Although Huff would continue to work intermittently for Kahn for another two years (until the completion of his current project), the better part of his efforts would now shift—permanently, it would turn out—towards design pedagogy.<sup>12</sup> “Suddenly, sheer chance had veered me far off the course of my original intent, merely to spread the word in the States about a consequent course of a progressive school of design. I had stuck out my neck; my head was on the platter.”<sup>13</sup>

Huff taught at Carnegie from 1960 until 1972, a period during which he facilitated the invitation of Maldonado, Bonsiepe, and other central figures from the HfG to visit as guest lecturers. Maldonado returned the favor. From 1963 until the HfG’s dissolution in 1968, Huff would also return repeatedly to Ulm to teach basic design. By 1963, however, a number of key changes had occurred. First, the HfG had weathered another storm and emerged intact but yet again transformed. Horst Rittel and likeminded faculty who had arrived during Maldonado and Aicher’s push for the “scientification” of design, and whose line of thinking was above all methodological, had largely dictated the direction of the HfG from June 1960 to December 1962.<sup>14</sup> Maldonado and Aicher fought to regain control of the school, reasserting *design*, not an ever-more sophisticated methodology (or worse, as

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15 Maldonado, Tomás and Gui Bonsiepe. "Science and Design," from *ulm* no. 10/11, 1964. p. 10–29.

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16 Some have suggested that the HfG could be understood as the birthplace of computation in architecture, and while the methodological impulse underlying this period of the school's history, as well as the fetishization of complexity that occurred as a result, would seem to support this assessment, it could also be argued that the formal or organizational complexity of the outputs of design computation often slip past a threshold of comprehensibility. By contrast, the results of Huff's Parquet Deformations, which generally involve more incremental and subtle manipulations, are compelling precisely because they are done manually, and therefore insist upon a productive tension between complexity and control.

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17 *Ibid.*

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18 No accident, certainly. After a trip to America in 1957, where Inge Aicher-Scholl had visited Princeton's Perception Education Center, there was huge support at the HfG to establish an Institute of Optical Perception, an idea that would come to fruition at the height of the methodologists' influence. Spitz, p. 213.

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19 Huff had initially misunderstood these principles upon being introduced to them by Maldonado, but later mastered through an independent study of crystallography—to affect the gradual mutation of the "tiles" across an orthogonal or rotated grid. "Grundlehre at the HfG," p. 86.

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20 Huff's "discovery" was later the topic of an article, "Parquet Deformations: Patterns of Tiles that Shift in One Direction," in *Scientific American*. Penned by Douglas Hofstadter, the scholar of cognitive science, and by that time Pulitzer Prize-winning author of the book *Gödel, Escher, Bach: An Eternal Golden Braid* (1979), as part of his "Metamagical Themas" column (1981–83), the article brought Huff's work to an audience outside of the design world, who now approach the exercise from the standpoint of optical theory or programming.

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21 Student output from Huff's teaching of the Parquet Deformations exercise during his first few years at Carnegie Institute of Technology was featured in "An Argument for Basic Design," an article he contributed to issue 12/13 of the HfG's journal *ulm* (1965).

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they saw it, "methodolatry"), as the intended focus of the HfG.<sup>15 16</sup> Aicher and Maldonado, now rector and vice-rector respectively, set about adjusting the curriculum to put things back on track. Responding to the lessons learned from this most recent challenge, changes to the curriculum were set in motion that would bring an end to the unified *Grundlehre*, such that students could for the first time enter one of the specialized departments from the moment of arrival. Instead, they would encounter a modified *Grundkurs* in their first year that was tailored to the particular mediums, materials, and methods of their chosen course of study. Huff, for his part, taught in the Visual Communication and Building departments. By this time, both Albers and Maldonado had begun to realize the suitability of "basic design," in all of its complexity, as a potent realm for advanced studies. In other words, there was a tacit admission among the discipline's innovators that there was, perhaps, nothing especially basic about "basic design."<sup>17</sup>

Huff's exercises in both schools were heavily indebted to those he had confronted as a student at the HfG, and so Maldonado's (and by extension Albers's) concern for Gestalt theory remained embedded in his approach, including exercises using raster modules to produce matrix-like compositions that call to mind the popular Optical Art of the period.<sup>18</sup> Huff would further develop Maldonado's *parquetry* assignment into something more sophisticated: the so-called "Parquet Deformation" exercise, which focused on two-dimensional transitional geometry, challenging students to deploy advanced principles of symmetry (*twofold-* and *fourfold mirror rotation symmetry*).<sup>19 20</sup> The parameters of this exercise were so thoroughly conceived that as early as 1961, students were achieving results that were every bit as sophisticated as those executed some thirty years later.<sup>21</sup>

Huff taught at the University at Buffalo SUNY from 1974 until his retirement in 1998, focusing predominantly on

an optional basic course for "pre-architecture" students, and a thoroughly conceived, collectively instructed first-year architecture studio curriculum that shows strong signs of his influence.<sup>22</sup> By 1985, however, Huff had lost his enthusiasm for teaching introductory architecture courses, shifting his focus to a graduate course in which students did exhaustive studies for a "new experimental school of architecture," documenting historical references including the HfG. Later, seemingly in keeping with Maldonado and Albers's earlier realization, he established a graduate level basic design course, hoping that these more mature and technically adept students would gain as much from the instruction as he had during his brief stint at the HfG decades earlier.

Huff's desire to extract from basic design some manner of organizational values for the practice of architecture, so lucidly expressed in the immediate aftermath of his first encounter with Maldonado, seems to have waned over the years in favor of a conviction that basic design, as an autonomous, syntactic discipline, more than warranted his full attention. Though some echoes of basic design — the Bauhaus *Vorkurs*, the HfG's *Grundlehre*, and others — may still be found in the instruction of architecture today, it is somewhat perplexing that one of its most vocal champions left it to a new generation to focus more emphatically on explicitly architectural outcomes of what Huff himself acknowledge, at its very core, to be a study of *structure*, not only perceptual, but also physical.<sup>23</sup> Perhaps the challenge of "bridging" the chasm between abstract, non-applied design, and applied design, so central to Maldonado's thinking in the 1960s, which Huff himself acknowledged, proved to be too much to surmount.

It is not difficult to project how the principles of Huff's largely two-dimensional exercises—and the structural, geometric, and by extension spatial agility students ought to have extracted from their execution—could

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22 Five “fragments” of architectural performance were emphasized in this “basic architecture” curriculum: “the anthropocentric and the ergonomic (“the body’s relation to itself and to objects in space”); the constructional (the smaller and larger joinery of specific material(s); the formal or syntactic (emphasizing the void of space and involving aesthetic judgment); the environmental (passive control of natural elements—light, acoustics, climate); the contextual (urban and pastoral landscape). Each fragment was addressed by tasks that strictly minimized, during targeted consideration, the involvement of the other four fragments.” “Grundlehre at the HfG,” p. 89.

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23 “An Argument for Basic Design,” p. 26.

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24 Huff’s teaching did include a handful of explicitly three-dimensional problems, notably the so-called “trisection of the cube,” in which students were charged with applying a series of sophisticated symmetry operations towards the division of a cubic volume into three identical parts. The HfG-Archiv in Ulm includes a number of exquisitely executed wooden models of this exercise’s outcomes. Yet one could argue that this exercise

was fundamentally a “solid-void” operation, and therefore more applicable to lessons about mass than to the sophisticated structural possibilities implicit in the Parquet Deformations exercise.

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25 Beginning in 1957, following Max Bill’s departure from the HfG, the Department of Architecture became the Department of Building. Under the leadership of Herbert Ohl, the department pursued an agenda consistent with Maldonado and Aicher’s broader vision of industrial design, centered on the development of space-frames, panelization, and other prefabricated tectonic systems. One might argue that this preoccupation suggests a clear indebtedness to Konrad Wachsmann, a central member of the architectural faculty during the earliest years of the HfG’s existence. Yet the school was deprived of Wachsmann’s expertise as they set down this new path; he departed in 1957 in protest of Maldonado and Aicher’s plans to establish an Institute of Industrialized Building: an apparatus intended to develop productive relationships with private industry. For a more thorough account of this development, see René Spitz’s exceptional *The View behind the Foreground: The Political History of the Ulm School of Design, 1953–1968* (Edition Axel Menges, 2002).

have been applied to the realization of remarkable architectural outcomes.<sup>24</sup> It is therefore somewhat perplexing, in light of the obvious architectural potential of applying these principles to three-dimensional structures and the resonance such an approach would seem to have with the building systems-oriented pursuits of the HfG’s Department of Building (as clearly indicated by the fact that Huff was among the teachers of that department’s *Grundlehre* on numerous occasions), that he so stubbornly resisted such a step throughout his career.<sup>25</sup> Or it would be, at any rate, if not for the fact that he himself responded to this apparent contradiction.<sup>26</sup>

“I have dealt all along, as Albers put it, purely with *form that exists for its own sake*, in the confidence that immersion in formal content alone—devoid of cultural, referential, or assistive, even physically characterized overtones—can unleash the sensory capacity. I speak now for myself. My overarching objective has been to elevate, without inordinate distraction, my students’ mastery of their own innate aesthetic acuties.”<sup>27</sup>

If anything, Huff’s contributions to the further development of basic design, as well as his efforts to serve as a conduit from Ulm to American architectural academia, hint at a fundamental truth: that such innovations as the Bauhaus Vorkurs rarely end with the dissolution of the institutions that gave birth to them. Rather, they scatter and evolve, at times beyond recognition, in response to new constraints. With this in mind, “radical pedagogies” must be understood as a fundamentally recursive phenomenon.

Huff died at the age of 92 in January 2021. In the absence of one of its most vocal proponents, the question persists as to what this often misunderstood field of “basic design,” so central to the foundations of twentieth century design pedagogy, may yet have to offer students of architecture in the twenty-first.

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26 There have been some efforts in recent years to use a three-dimensional translation of Huff's Parquet Deformation exercise (or comparable programs) to spark the (physical) structural imagination of students, by the likes of Werner Van Hoeydonck (lecturer at TU Wien, and editor of a forthcoming book *Space Tessellations*, about Huff's discovery and its applications), Tuğrul Yazar (Istanbul Bilgi University), Benay Gürsoy Toykoç (Penn State University), and others.

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27 "Grundlehre at the HfG," p. 86–88.

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