

# “Is the Bauhaus Relevant Today?”: Design Theory and Pedagogy at the Hochschule für Gestaltung, Ulm (1953-1968)

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## **Abstract**

The post-war German design school, The Hochschule für Gestaltung, Ulm (1953-1968), has long lain in the shadow of its more famous predecessor. Indeed, the school was initially conceived—at least by its first Rector, Max Bill—as a new Bauhaus rising from the ashes of the war, a home to bring back the scattered Bauhäuslers. Walter Gropius opened the purpose-built campus and Bill modelled the first year of its curriculum on the famous Bauhaus *Vorkurs*, or foundation year. But many members of Ulm led by its second Rector, the Argentine Tomás Maldonado, challenged this revival and questioned the scope and purpose of any presumed institutional inheritance. This paper examines this challenge that in turn produced an equally influential program of design education, the “Ulm Model” (*Ulmer Model*). To explicate the Ulm Model, this paper explores three aspects of Ulm’s reinvention of the Bauhaus legacy: 1) The critique of Bauhaus pedagogy; 2) The School’s concept of environmental design (*Umweltgestaltung*) and environmental knowledge or science (*Umweltwissenschaft*); and, 3) The critique of the conservative canonisation of the Bauhaus in favour of what Maldonado called the “other” Bauhaus.

Like its precursor, the HfG Ulm closed prematurely and under controversy, and its members underwent their own diaspora. This paper concludes by looking briefly at the HfG’s transnational legacies to pose anew the question the Ulmers themselves asked, is the “Bauhaus relevant today?”

## Introduction

“The biggest difference between the HfG and any other school of design in the world is precisely the rejection of those principles which gave the Bauhaus its meaning...”

—Richard Hamilton (after visiting the Hochschule für Gestaltung in 1959) <sup>1</sup>

If noted at all—the literature is still scant—the impact of the Hochschule für Gestaltung Ulm (HfG) on contemporary design has been subsumed under the legacy of the Bauhaus. In reality, the HfG promulgated a set of profound modulations and alternatives to Bauhaus training and to what Tomás Maldonado, the second Rector of Ulm, called the Bauhaus “myth” or “cult.”<sup>2</sup> These modulations and alternatives have produced contemporary knowledge practices and discourses that have had a very different reach (and an often far wider one) than that of the Bauhaus. The legacy of the Bauhaus primarily rests with its extensive influence on design and art school curricula and on the “solid” design, as it were, of architecture, products and visual culture (Reyner Banham’s “first machine age”). On the other hand, and although famous for its distinctive industrial design aesthetic, the Ulm legacy is ultimately in the field of “metadesign.”<sup>3</sup> With this term I mean to include the fields of design knowledge and practice that have emerged since the 1950s and can be characterised as postindustrial: Design methods, design science, design management, systems and operational design, environmental design, and what has become known as design thinking. While it is not sufficient historically (or theoretically) to distinguish Bauhaus from Ulm so simply by the terms “industrial” and “postindustrial,”<sup>4</sup> the qualitative difference between the modes of knowledge at the two Schools was clearly reflected in their respective approach to curricula and to training, and in their relative estimation of the kind of societies they were designing for—even though both were claiming to be designing for industrial culture. After initially introducing Bauhaus methodology and syllabi, the Ulm School immediately supplemented it, and in many cases replaced it, by the then nascent fields of cybernetics, information theory, semiotics and semantics, and systems and organisational theory. Maldonado attempted to capture this heady concoction of contemporary discourses with the term “scientific operationalism,” while his student and later colleague Gui Bonsiepe aligned it with “environmental science” (*Umweltwissenschaft*). Both these concepts were

devoted to designing for what HfG teacher, French social psychologist and cybernetician Abraham Moles characterised as the “*milieu artificiel*.”<sup>5</sup> I will argue that it is at this level of designing for an artificial environment that is the most enduring legacy of Ulm, and not the work the School did for Braun, BASF, Lufthansa or Olivetti, however important that work may be and however influential it has been in terms of its elegantly minimalist style (the famous “*rechte Winkel*” of Ulm).

In shining a more focussed light on this legacy, we can also reveal another dimension of the Bauhaus. The Ulmers readily admitted the seeds of its own theory and pedagogy were to be found in the alternative traditions, as it were, of its predecessor, particularly the turn to a more rational, scientific approach to industrial design during the Hannes Meyer era (what the Ulmers called the “miracle” of the Bauhaus<sup>6</sup>). The Ulm School also identified the notion of environment (*Umwelt*) as a “concrete field of design activity” (*konkretes Entwurfsfeld*)<sup>7</sup> in Bauhaus theory. In other words, there is still what Maldonado called the *other* Bauhaus to emerge as an object of study. Whatever the case, Ulm’s own form of pedagogy—the combination of theory and practice, science and design that was to become known as the Ulm Model<sup>8</sup>—was both an absorption of and resistance to Bauhaus philosophy; but, I shall argue, it has ultimately produced a very different genealogy of design knowledge than that of its more famous precursor, and one that is perhaps more relevant today.

### **The Critique of Bauhaus Pedagogy**

The Hochschule für Gestaltung was created after the war by the Scholl Foundation which, in turn, was established in honour of murdered Nazi resisters Sophie and Hans Scholl by their remaining sibling Inge and her partner, graphic designer Otl Aicher. The first version of the Ulm School was an adult education centre and stationed in the city itself.<sup>9</sup> Well-known political activists had a key role in devising the original curricula, including members of Gruppe 47.<sup>10</sup> This political approach to education set Ulm’s institutional DNA, a genetic structure that proved resilient, and later summarised by Bonsiepe as a form of “critical rationalism.”<sup>11</sup>

At this point Max Bill was engaged after previously impressing Scholl and Aicher with his touring exhibition *Die gute Form* (1949). Bill was the School’s

inaugural Rector (1953-1957) and architect of the purpose-built campus set above the city on Kuhberg (Cow Hill). Swiss born Bill had enrolled to study architecture at the Bauhaus Dessau and spent 18 months there.<sup>12</sup> Naturally, Bill brought with him the design values and pedagogical assumptions explicitly inherited from the Bauhaus. Walter Gropius in fact offered the name of “Ulm Bauhaus” (it was rejected by Scholl and Aicher<sup>13</sup>), and local papers too declared the Bauhaus had “returned.”<sup>14</sup>

The initial curriculum followed the Bauhaus model. The proposed four years of design study begun with a general year of education containing much of the art training and aesthetic philosophy of the HfG predecessor, and Bauhaus instructors Joseph Albers, Johannes Ittens, Helene Nonné-Schmidt, and Walter Peterhans were present for a while teaching into the course.

But for the new teachers at Ulm (and many students, national and international) this fundamentally aesthetic—even spiritual in the case of Ittens—approach to study of design was soon deemed irrelevant to contemporary “technical civilisation.”<sup>15</sup> A protracted, somewhat Oedipal struggle with Bill ensued. Bill left and was replaced by a Faculty Board of Aicher, Maldonado and the sociologist Hanno Kesting. This group saw little relevance in Bill’s attempt to reconstitute Bauhaus design education at Ulm on applied art principles (no matter how devoted to “function” they were intended to be); indeed, Maldonado in particular viewed the program as retrograde. As he rhetorically stated, “...although Marianne Brandt’s geometric tea-set ‘Bauhaus 1924’ is now considered a museum curiosity, it is asserted that we must regard ‘Bauhaus 1924’ pedagogical ideas as important today.”<sup>16</sup> Thus, the departure from applied art was initiated.<sup>17</sup> In Maldonado’s vision, practice and theory (or “analysis” as he was fond of saying: *praxis und analyse*) were equally essential. This combination was to become the crux of the Ulm model.

The basics of that model can be found in Maldonado’s own version of the foundation year (*Grundlehre*). In a 1957 outline and defence of the new curriculum, Maldonado states from the Bauhaus through to its contemporary American versions (for example, Black Mountain College), the *Vorkurs* was conceived as preparation in basic materials and principles—paper, wood, glass, colour scales, elementary geometry, etc., all of which was “more or less scientific,” but taught practically.<sup>18</sup> According to Maldonado this fundamentally

non-conceptual approach to the initial training of the designer can be characterised by the following slogans (*schlagworten*):

- 1) You must (*man muss*) liberate the expressive capacity of the individual;
- 2) You must destroy the traces of verbal education;
- 3) You must teach practice manually and not by books;
- 4) You must re-educate the senses.<sup>19</sup>

For Maldonado this primacy of practice was deeply problematic. Can one, he questioned, in fact teach the necessary skills needed by today's "new type of designer"—for example, collaborative team-based design, administration, planning, understanding user and customer needs—in the "learning by doing" mode?<sup>20</sup> Maldonado's alternative was conceived as follows:

- 1) Introducing students to the practice and analysis (*die praxis und analyse*) of the ethnic medium of design (*der ethnischen mittel der gestaltung*).
- 2) An introduction to the practice and analysis of visual means, both productive and perceptual.
- 3) Introduction to the practice and analysis of the cultural problems of our time.
- 4) Promotion of the awareness of the social responsibility as a form-designer (*formgestalter*).
- 5) Promoting the liberation of prejudice and psychological deformations of (the designer's) early training.
- 6) Selection of the most capable students.<sup>21</sup>

The workshop mode was not rejected, however. But instead of *Formlehre*, exercises were conducted in, for example, hyperbolic surfaces and topological transformations, and the Gestalt theory of the Bauhaus masters was extended by information analysis, mapping and visualisation in pursuit of the "...optimal transmission of information."<sup>22</sup>

The new foundation year was only the tip of the iceberg of larger pedagogical transformation. Later students were exposed to lessons conducted in at least

the three areas: “cultural history,” “operational research” and the “epistemology of science.”<sup>23</sup> The diversity of teaching staff reflected these foci.

Along with modifications of more traditional forms of design (for example, architecture was dissolved into “building”), the HfG also established working studios (development groups: *Entwicklungsgruppe*) where much of the design for industry occurred, most notably and successfully led by Hans Gugelot and Aicher himself.

Furthermore, new areas of study were introduced, including an Information Department which was intended to train for the relatively new phenomenon of the mass media. In this department, along with work in journalism in live beta conditions, the philosopher and mathematician Max Bense offered courses in all aspects of information theory. A filmmaking department (*Filmgestaltung*) was established in 1961 and run by Alexander Kluge.<sup>24</sup> Indeed, it was at the HfG that the Oberhausen group of filmmakers was founded and where they announced their manifesto that was to become the basis of the New German Cinema. This was typical of Ulm: instead of the workshops of painting and metalwork and textiles proposed by Bill, information and cinema, radio and computing.

To make this shift more concrete I will focus on one concept of design common to most if not all of the School, that of “environmental design.”

### **Umweltgestaltung**

In deciding on a self-definition or mission, from the very beginning the HfG was focussed on environmental design (*Umweltgestaltung*).<sup>25</sup> Co-founder Otl Aicher reflected that “...we were interested in designing daily life and the human environment...”<sup>26</sup> Maldonado in a 1970 text contextualised the School in terms of the new necessity to think and act at the environmental level, which for meant for him the construction of a progressive “human ecology.”<sup>27</sup> As further testament to the tenacity of the concept, when the School closed in 1968 it was replaced (again for a short period of time) by the Stuttgart Institute of Environmental Planning (*Umweltplanung*). Furthermore, Ulmer Claude Schnaidt would go on to assist founding the Institute of Environment in Paris,<sup>28</sup> and others, in diaspora, would build environmental design curriculum into design schools across Latin America, the Subcontinent and Japan; and Horst Rittel (of

“wicked problems” fame) would spend the rest of his teaching career at the College of Environmental Design at Berkeley. For his part, Gui Bonsiepe, before ending up on the West Coast and self-proclaiming to have invented interface design, would work with Salvador Allende’s government in Chile in 1972 to design a cybernetic economy according to environmental design principles.<sup>29</sup> While this issue cannot be addressed here, in reality “environmental design” faded from design ambition and design education after the 1970s—and Bauhaus methods proved more resilient.<sup>30</sup>

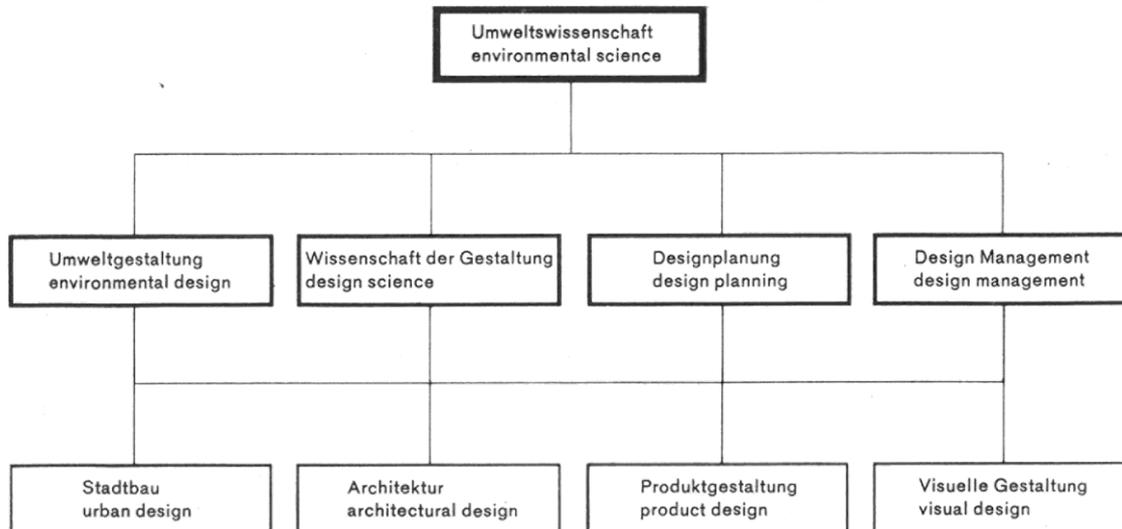
Indeed, for Max Bill it was the concept of “environment” that bound the HfG to its forebear. For Bill this was expressed at the levels of scale, scope and responsibility: it was part of the Bauhaus mission and therefore by implication that of the HfG’s, to bring “... the whole environment created by us, from the spoon to the city, ... into harmony with social conditions, which implied shaping those conditions too.”<sup>31</sup> As made clear by Bill, in the Bauhaus legacy all things are made available for design activity and for “shaping.” This vision was encapsulated in practice by Gropius’ desire to unify art and industry under a general concept of architecture or building to realise the long-held ambition of a synergy of the arts. “Our ultimate goal,” Gropius remarked in hindsight from America, was the “... composite but inseparable work of art, the great building.”<sup>32</sup> Accompanying this goal was the social, even “biological,” mission to enhance the human environment by averting, through design, “... mankind’s enslavement by the machine.”<sup>33</sup> Any apparent coldness in appearance and in mission of the modern movement in building—its economy of form, its rationalisation of process and material, the primacy of functionality—must be united with the “aesthetic satisfaction of the human soul.”<sup>34</sup>

To an extent the Ulmers concurred with this position. In a 1964 talk in New York at the American Institute of the Graphic Arts, Bonsiepe identified the origin of design itself with the opening of the Bauhaus in 1919 because, he claimed, the Bauhaus was the first school to devote itself to the “total human environment as an object of design.”<sup>35</sup> Nonetheless the HfG differed greatly on what constituted that “environment” and the design operations to be performed on it: the reality of the contemporary world was industrial, yes, but also informational, communicational, and profoundly artificial.

As conceived by some Ulm theorists, including Abraham Moles, environmental design placed the gestural system of designing (craft, handicraft) into question. Design is no longer simply identifiable at the scale and dimension of the human figure and its sensory organs and then writ large as building, but rather in the informational orbit, as it were, of the messages surrounding and shaping our world. True to its cybernetic origins, the *Umwelt* for which we design, Moles claimed, "... appears... an immense assembly of organisms."<sup>36</sup> That assembly is governed by feedback, and there is little or no differentiation between systems, whether natural or technical. This why designing according to nature, a Bauhaus first principle, had no such similar status at the HfG; it is also why communication design—in its widest possible sense—assumed such an importance at the School.

The HfG spokespeople also did not admit of the notion of "aesthetic satisfaction." Ulm did not view the industrial environment in the manner of the Arts and Crafts legacy, that is, as fundamentally anti-natural, malformed, if not poisoned, for which design, in the words of Gropius, was to be the "antidote (*die medizin*)."<sup>37</sup> Consistent with this attitude, Ulm was not interested in the synergy of the arts, and reengineered design as a specific mode of knowledge that could be used to analyse and develop responses to concrete situations, tasks and problems, the "task at hand" as Aicher was fond of saying. The new environment, therefore, was to be understood and explicated scientifically through method and not "intuitively" through form.

Towards the end of Ulm's existence and therefore in preparation to further its legacy, Bonsiepe sketched out the essentials of design knowledge:



**Fig 1: Gui Bonsiepe, “Environmental Science Diagram,” *Ulm 21* (1968): 12.**  
 © HfG-Archiv/ Museum Ulm.

### The Other Bauhaus

This anti-art approach was to be found in other aspects of the Bauhaus tradition, members of Ulm proposed, particularly in the work and teaching of those Otl Aicher called the “dissenting voices of empiricism”<sup>38</sup>: Josef Albers, Mart Stam, and Marcel Breuer.

But it was the Hannes Meyer period of the Bauhaus that inspired Ulm above all, at least on paper. At least three aspects of Meyer’s directorship appealed to the HfG: the focus on a scientific approach to design, the focus on collaboration in design work (an architect for Meyers for example, and *mutatis mutandis* for Ulm theorists, was no longer an artist but an organisational specialist, who would bring together “...economists, statisticians, hygienists, climatologists, industrial engineers, standardization experts, heating engineers...”<sup>39</sup>); and, third, the foregrounding of politics.

This reliance on a certain image of Meyer to differentiate Ulm from the Bauhaus was played out in a number of issues of the HfG journal. This was occasioned by Maldonado’s “Is the Bauhaus Relevant Today?,” nominally a review or Hans Wingler’s then recently published overview of the famous School.<sup>40</sup> There Maldonado claims that with the depreciation of Meyer in the

Bauhaus narrative dominated by Gropius the “other Bauhaus” too has been forgotten, or at least intentionally downplayed (“frustrated” was his word). For Maldonado, Meyer represents the rejection of Expressionism, Jugendstil, and “decorativism.”<sup>41</sup> Meyer’s period of stewardship was also symbolic of a challenge to the notion that the social impact of design can be secured simply as a “new way of life” (Gropius’ phrase) rather than as a concrete political program (unlike Claude Schnaidt, for example, Maldonado was interested in Marxism but was never a Communist). For Maldonado, the increasing canonisation of the Bauhaus is inversely proportional to its impact and its contemporary relevance: the Bauhaus is being turned by the conservative media and by the cultural elite “... into a relic only shown on festival occasions.”<sup>42</sup>

While Walter Gropius took issue with Maldonado’s elevation of Hannes Meyer, claiming the second Bauhaus rector “...let party politics disintegrate the school,”<sup>43</sup> implying a similar fate for Ulm, Schnaidt could still feel able to claim that “...the Hochschule für Gestaltung was the only school of its kind in the Western world to have an openly anti-capitalist doctrine.”<sup>44</sup> The ultimate and unfortunate irony of this debate is that the Leftist radical politics of some members of Ulm and particularly the students in light of May 68 gave incentive to government authorities to turn off the funding tap once and for all. This was also to be the fate of the new Ulm in Paris, the Institute of the Environment.

The time of Ulm’s closing coincided with the beginning of the 50<sup>th</sup> anniversary celebrations of the Bauhaus. At a travelling exhibition in Stuttgart in 1968, Ulm students and faculty protested at the imminent closure of their School, “wondering how, at the moment when the Bauhaus was being canonised, harm could be done to its direct descendent?” “Mourn the Bauhaus but keep Ulm” the posters declared; “resurrection of the Bauhaus, ascension of the HfG” another insisted.<sup>45</sup>

### **Conclusion: Is the Bauhaus Relevant today?**

“pity there isn’t an ulm anymore”—Otl Aicher, *bauhaus and ulm*

Both the Bauhaus and Ulm asked the question, what world are we designing for? For the Bauhaus, it was the new industrial world, and the role of design

was to temper, direct and ultimately better industrial culture; design, or *gute form* in Bill's understanding, was an "antidote to the overmechanisation that plagues us," as Gropius said. For Ulm, it was also the world of communication technology and information. The HfG was designing for a transitional world, what we would now recognise as postindustrial (or the information/knowledge economy). As such, the HfG devoted much of its design theory and pedagogy not just to the traditional forms of industrial design but also to the "meta" level of design, that is, designing the processes of designing, and conceptualising the design process and the design act as a form of knowledge—in particular, as *Umweltwissenschaft*, environmental knowledge. For Ulm, or at least for its most vocal representatives, the relevance of the Bauhaus was determined on this new and ever-evolving terrain.

While clearly the origin of design "methods" and design science, the HfG is, in many ways, also the origin of design as form of practical knowledge that embraces organisation, planning, management, creative "problem solving," and lately, design thinking. But as the concept of design expands, the role of the designer dissolves, as it were. For Ulm, this dissolution, at least in theory, had an economic import: it was an essential part of not only preparing designers for the new industries of information but an act of collaboration with it. But it also had a political objective: to demystify the work of the artist-designer and introduce the complete designer, that is, the environmental designer. These broader notions of organisation, management and planning are by no means unproblematic. But insofar as Ulm sought to align them with a socially and politically informed design pedagogy and practice, it makes the School an essential starting point for an elaboration—and critique—of what I am calling "metadesign." Is the Bauhaus, then, relevant to the same task—pedagogically, conceptually, pragmatically?

In an interview in his 80s, Maldonado still claimed the Bauhaus has "ceased to be current" except for its ongoing lesson: the exhortation to "find new solutions to the demands of our own time." This lesson he added, "...requires, in the end, our liberating ourselves from the idea of Bauhaus as a myth, as a cult object."<sup>46</sup> I wonder what would serve us best in regard to Ulm: to mythologise it further, or begin the process of demythologising? Are they in fact separate theoretical ventures? Whatever the case, this process should occupy

a central place in contemporary design history which does not seem yet to be able to grasp “postindustrial” design, and so perhaps this is the reason Ulm remains understudied. Not to embark on this process means that design as a profession and as it is taught will embrace post-methods, post-science design knowledge—all that falls under design thinking, design management, design entrepreneurship—as a *fait accompli* rather than with the criticality it deserves.

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Gui Bonsiepe, "Environmental Science Diagram," *Ulm* 21 (1968): 12. © HfG-Archiv/ Museum Ulm.

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<sup>1</sup> Cited in Jonathan M. Woodham, *Twentieth Century Design* (Oxford: Oxford University Press, 1997), 179.

<sup>2</sup> Tomás Maldonado, *In Conversation With/ en conversación con María Amalia García* (New York: Fundación Cisneros, 2010), 60.

<sup>3</sup> I use the term to refer to theories and practices (and pedagogies) that explicitly focus on second and third order design, that is, the designing of the process of design and designing those processes.

<sup>4</sup> I say not “sufficient” because the category of “postindustrial” is by no means simply descriptive; it equally serves as a discursive exhortation to a particular economic practice.

<sup>5</sup> Abraham Moles, “*Théorie de l’information*,” *Bit International* 1 (1968): 19. See also Moles, “Products: Their Functional and Structural Complexity,” *Ulm, Quarterly Bulletin for the Hochschule für Gestaltung* 6 (1962): 4-12. Hereafter the HfG journal is given as *Ulm*.

<sup>6</sup> Maldonado, “New Developments in Industry and the Training of the Designer,” *Ulm* 2 (1958): 39.

<sup>7</sup> Maldonado, “Ist das Bauhaus aktuell?/ Is the Bauhaus Relevant Today?,” *Ulm* 8/9 (September 1963): 6.

<sup>8</sup> Herbert Lindinger, “Ulm: Legend and Living Idea,” in Lindinger, ed., *Ulm Design: The Morality of Objects. Hochschule für Gestaltung Ulm 1953–1968*, trans. David Britt (Cambridge, MA: The MIT Press), 11-12.

<sup>9</sup> See Eva von Seckendorff, *Die Hochschule für Gestaltung in Ulm: Gründung (1949-1953) und Ära Max Bill (1953-1957)* (Marburg: Jonas, 1989); Eva Moser, *Otl Aicher, Gestalter* (Ostfildern: Hatje Cantz, 2012).

<sup>10</sup> René Spitz, *Hfg Ulm: The View Behind the Foreground: The Political History of the Ulm School of Design, 1953–1968* (Stuttgart: Edition Axel Menges, 2002), 58.

<sup>11</sup> Gui Bonsiepe, “The Invisible Aspects of the HfG Ulm,” in Bonsiepe, *Interface – An Approach to Design*, trans. Eileen Martin (Maastricht: Jan van Eyck Akademie, 1999), 122. Ulmers Martin Krampen and Günther Hörmann situated the HfG squarely in the continuing critical tradition of modernity (that is, one that acknowledges and incorporates the Frankfurt’s School’s critique of the Enlightenment “project”); see their *Die Hochschule für Gestaltung Ulm – Anfänge eines Projektes der Unnachgiebigen Moderne / The Ulm School of Design – Beginnings of a Project of Unyielding Modernity* (Berlin: Ernst & Sohn, 2003).

<sup>12</sup> Max Bill, *Form, Function, Beauty = GESTALT*, trans. Pamela Johnston (London: Architectural Association, 2010), 7.

<sup>13</sup> Aicher, “bauhaus and ulm,” in Aicher, *the world as design*, trans. Michael Robinson (Berlin: Ernst & Sohn, 1994), 85.

<sup>14</sup> See Keisuke Takayasu, “Criticism of the Bauhaus Concept in the Ulm School of Design,” *The ACDHT Journal* 2 (2017): 14.

<sup>15</sup> *Ulm* 1 (1958): 4.

<sup>16</sup> Maldonado, “New Developments in Industry and the Training of the Designer,” *Ulm* 2 (October 1958): 38.

<sup>17</sup> Bernard Rübenach in his contemporary radio documentary on Ulm commented, “One of the taboo words at Ulm is ‘art’.” Rübenach, “Der rechte Winkel von Ulm,” 1959, cited in Lindinger, *Ulm Design*, 175.

<sup>18</sup> Maldonado, “*Grundlehre*,” HfG-Archiv Ulm: Akte Unterricht Grundlehre 2eA298, 1956, reprinted in *form + zweck* 20 (2003): 22-27, 22. My translations and summaries from the original German.

<sup>19</sup> Maldonado, “*Grundlehre*”: 23.

<sup>20</sup> *Ulm* 2: 40

<sup>21</sup> Maldonado, “*Grundlehre*”: 26-27.

<sup>22</sup> See Anthony Frøshaug, “Visual Methodology,” *Ulm* 4 (April 1959): 57-68.

<sup>23</sup> See Lindinger, *Ulm Design*, 135.

<sup>24</sup> Lindinger, *Ulm Design*, 180ff.

<sup>25</sup> During the HfG’s initial planning, “... the Ulm concept needed a focus, everyone agreed on what is now called ‘Environmental Design’.” Heiner Jacob, “HfG Ulm: A Personal View of an Experiment in Democracy and Design Education,” *Journal of Design History* 1, nos. 3-4 (1988): 221.

<sup>26</sup> Aicher, “bauhaus and ulm,” 86.

<sup>27</sup> See Maldonado, *La Speranza Progettuale* (1970), translated by Mario Domandi as *Design, Nature, Revolution: Toward a Critical Ecology* (New York: Harper & Row, 1972).

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- <sup>28</sup> See Tony Côme, *L'Institut de l'environnement: Une école décroïsonnée* (Paris: Éditions B52, 2017).
- <sup>29</sup> See Eden Medina, *Cybernetic Revolutionaries: Technology and Politics in Allende's Chile* (Cambridge, MA: The MIT Press, 2011).
- <sup>30</sup> Claude Schnaidt claimed later this was due to the complexity—the rough, uneven terrain (*le terrain accidenté*)—of the idea of environment itself; see Schnaidt, *Regards sur le terrain accidenté des environneurs et des environnés* (1972), in Claude Schnaidt, *Autrement dit: écrits 1950-2001* (Gollion: Infolio éditions, 2004), cited by Jeanne Quéheillard, "Institut de l'Environnement," *Rosa B*, no. 5, Environnement et design, Accessed 26 October, 2019, <http://www.rosab.net/fr/la-situation-francaise-les/l-institut-de-l-environnement.html?lang=fr>
- <sup>31</sup> Bill, "vom bauhaus bis ulm," cited in Karin Gimmi, "On Bill" in Bill, *Form, Function, Beauty = Gestalt*, 9.
- <sup>32</sup> Walter Gropius, *The New Architecture and the Bauhaus*, trans. P. Morton Shand (Cambridge, MA: The MIT Press, 1965), 65.
- <sup>33</sup> Gropius, *The New Architecture*, 54
- <sup>34</sup> Gropius, *The New Architecture*, 24.
- <sup>35</sup> Bonsiepe, "Education for Visual Design," *Ulm* 12/13 (1965): 18.
- <sup>36</sup> Moles, "Products: Their Functional and Structural Complexity": 7.
- <sup>37</sup> Walter Gropius, cited in Max Bill, "der modellfall ulm, zur problematik hochschule für gestaltung," *Form* 6 (1959): 18-19.
- <sup>38</sup> Aicher, *world as design*, 89.
- <sup>39</sup> Hannes Meyer, "Building" (1928), in Ulrich Conrads, ed., *Programs and Manifestoes on 20<sup>th</sup>-Century Architecture* (Cambridge, MA.: The MIT Press, 1970), 120.
- <sup>40</sup> Maldonado, "Is the Bauhaus Relevant Today?," *Ulm* 8/9 (September 1963): 5-13
- <sup>41</sup> Maldonado, "From the Author to Walter Gropius," *Ulm* 10/11 (1964): 66.
- <sup>42</sup> Maldonado, "Is the Bauhaus Relevant Today?": 8
- <sup>43</sup> Walter Gropius, "Comments on 'Is the Bauhaus Relevant Today?'," *Ulm* 10/11: 63.
- <sup>44</sup> Claude Schnaidt cited in Tony Côme, "L'Institut de l'environnement, Descendent du Bauhaus ou dernier bastion de mai 68?," *French Historical Studies* 41, No.2 (April 2018): 314. My translation.
- <sup>45</sup> See Spitz, *HfG Ulm*, 377-379.
- <sup>46</sup> Maldonado, *In Conversation*, 63.