

# Making and Breaking the Grid

A Graphic Design Layout Workshop

Timothy Samara

The history of the grid's development is convoluted and complex. Modern graphic design, as we know it, is a young profession, but incidences of grid use predate the Romans and the Greeks; a full exposition of that history would be impossible here. For our purposes, the grid that is used in Western graphic design evolved during the Industrial Revolution. Ideas circulate in artistic communities, however; trying to pinpoint the precise genesis of one does history a disservice. Gathered here is a rather simplified overview of a complicated process. Contributions by thousands of designers, over more than a century, have been generalized into a few pages; many have been overlooked or mentioned only briefly in passing. The bibliography at the end of this book will help interested readers pursue a more in-depth understanding of this intricate subject.

## Coming to Order

### A Brief History of the Grid in Modern Graphic Design

**The Brave New World of Industry** The grid's development over the past 150 years coincides with dramatic technological and social changes in Western civilization and the response of philosophers, artists, and designers to those changes. The Industrial Revolution that began in 1740s England changed the way people lived—its effect on our culture was fundamental. As the invention of mechanical power induced people to seek a living in cities, power shifted away from the land-owning aristocracy toward manufacturers, merchants, and the working class. Demand from an urban population with ever-increasing buying power stimulated technology, which, in turn, fueled mass production, lowered costs, and increased availability. Design assumed an important role in communicating the desirability of material goods. In addition, the French and American revolutions facilitated progress in social equality, public education, and literacy and helped to create a greater audience for reading material.

With this enormous psychographic change came aesthetic confusion. The Beaux-Arts tradition, much unchanged since the Renaissance and bolstered by the strong moral and spiritual convictions of the times, held on to its aesthetic contrivances and notions of neoclassical taste. A Victorian penchant for Gothic architecture merged oddly with exotic textures imported from the outreaches of the British Empire.



Contradictory design approaches and the need to supply the consuming masses with products reached a kind of plateau in 1856 when writer and designer Owen Jones produced *The Grammar of Ornament*, an enormous catalog of patterns, styles, and embellishments that were co-opted to mass-produce poorly made goods of questionable aesthetic quality.

**Fitness of Purpose** The English Arts and Crafts movement in architecture, painting, and design grew out of a reaction to this decline. At the movement's forefront was William Morris, a young student of privileged background who had become interested in poetry and architecture—and their seeming disconnection with the industrialized world. Morris was inspired by John Ruskin, a writer who insisted art could be the basis of a social order that improved lives by unifying it with labor, as it had in the Middle Ages. Together with Edward Burne-Jones, a fellow poet and painter, and Philip Webb, an architect, Morris undertook the revitalization of England's daily aesthetic life. Webb's design of Red House in 1860 for a just-married Morris organized the spaces asymmetrically, based on their intended uses, thereby dictating the shape of the facade. At the time, this idea was unheard of—the prevailing neoclassical model called for a box layout with a symmetrical facade.

Furthermore, no suitable furnishings existed for such a house. Morris was compelled to design and supervise the production of all its furniture, textiles, glass, and objects, becoming a master craftsman in the process. The company that resulted from this experience, Morris and Company, vigorously advocated the notion that fitness of purpose inspired form; their prolific output in textiles, objects, glass, and furnishings heralded a way of working that responded to content, was socially concerned, and paid utmost attention to the finished quality of the work, even when it was mass-produced.

Arthur Mackmurdo and Sir Emery Walker, two of Morris' contemporaries, directed his attention toward type and book design. Mackmurdo's periodical, *The Hobby Horse*, espoused the same qualities—a purposeful proportioning of space and careful control of type size, type selection, margins, and print quality—to which Morris had aspired, but in printed form. In 1891, Morris established the Kelmscott Press in Hammersmith, producing exquisitely designed books in which the typefaces, woodblock illustrations, and materials were designed for their aesthetic integration and ease of production. Morris's most ambitious project was *The Works of Geoffrey Chaucer*, produced in 1894. Its illustrations, display type blocks, and carved initials were integrated through size relationships, and its layouts conformed to an overall predetermined structure that dramatically unified the pages and allowed for faster production. This book signaled a transition from medieval block manuscript (which paradoxically provides its aesthetic framework) to modern page layout, where multiple types of information are integrated into an articulated space.

The Arts and Crafts style gained momentum and was transformed in a number of ways—evolving into the sensuously organic style known as Art Nouveau in France; as the painterly, more architectural Jugendstil in Germany and Belgium—as designers became accustomed to the effects of industrialization. They sought new forms of expression that would speak to the inventive spirit of the age.

**The Architecture of Space** Influenced by a trip to England, the work of American architect Frank Lloyd Wright began a systematic evolution away from the organic while continuing to embody the same Arts and Crafts ideals. Like Philip Webb, Wright's work expressed a view that space was the essence of design, in which “the part is to the whole as the whole is to the part, and which is all devoted to a purpose.” Proportional relationships, rectangular zones, and asymmetrical organization became guiding principles of what was becoming Modernism. A group of Scottish collaborators—two sisters, Frances and Margaret McDonald, and their husbands, James MacNair and Charles Rennie Macintosh, who had met as students at the Glasgow School of Art—translated the medieval

flair of Arts and Crafts into more abstract and geometric articulations of space. They became known as the Glasgow Four, and publication of their work in book arts, objects, and furniture design in the periodical *The Studio* popularized their ideas as far away as Vienna, Austria and Hamburg, Germany.

**An Expanding Influence** Peter Behrens, an aspiring young German architect, grew up in Hamburg under this new influence, as well as that of the Viennese Secession, a countermovement that drew its inspiration from the Glasgow Four and Wright. The Secession distinguished itself with even more rectilinear approaches to poster and book design, as well as architecture. Designers and architects like Josef Hoffman, Koloman Moser, and Josef Maria Olbrich pursued functional simplicity and eschewed decoration. In 1900, Peter Behrens moved to an artists' colony in Darmstadt, established by the Grand Duke of Hesse. One of the other seven artists invited by the Grand Duke and given land to build a house was Josef Maria Olbrich. Through the effort of designing his house and all of its contents, Behrens—like Morris, and in close aesthetic alignment with Olbrich—found himself caught up in the same rational movement that sought order and unity among the arts. Along with industrial design and furniture, he also began to experiment with book layout and the new sans serif typefaces that were beginning to appear from foundries like Berthold. His first book, *Celebration of Life and Art*, is believed to be the first running text set in a sans serif face. Although this book maintains a block-manuscript approach to the composition of the page, it follows in the footsteps of Morris's spatially conceived works of Chaucer and lays important groundwork for grid development in its use of sans serif type. The more uniform texture of sans serif letterforms creates a neutrality within text that emphasizes its shape against the surrounding white space; placement and interval assume greater visual importance.

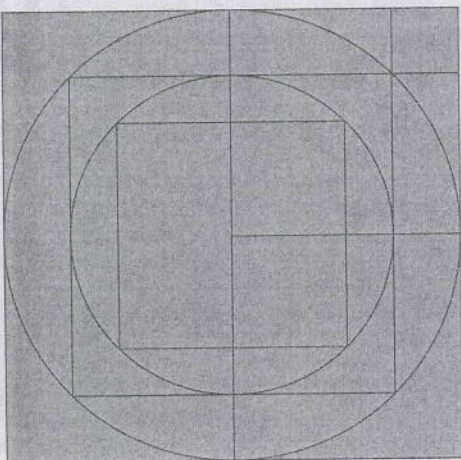


**Square and Circle**  
Grid diagram

Adapted from diagrams  
of J.L. Mathieu Lauweriks

Behrens moved to Düsseldorf in 1903 to direct that city's School of Arts and Crafts, developing preparatory curricula that focused on fundamental visual principals and the analysis of compositional structure. 1904 was a pivotal year for Behrens and the school, when Dutch architect J.L. Mathieu Lauweriks joined the faculty. Lauweriks had evolved a systematic approach to teaching composition based on the dissection of a circle by a square, creating a grid of proportional spaces. Behrens saw that this system could be used to unify proportions within architecture and graphic design; in 1906, he applied this theory to his exhibition pavilion and poster for the Anchor Linoleum Company.

**Rationalism, the Machine Aesthetic, and the Search for Universal Culture** In 1907, Behrens received a landmark design commission from the German electrical works, AEG, to be the company's artistic advisor. At the same time, he participated in the launching of the Deutsche Werkbund, or German Association of Craftsmen. Inspired by Morris but embracing, rather than rebelling against, the machine, the Werkbund sought to invent a universal culture through the design



of everyday objects and furnishings. Behrens's industrial-design projects through the Werkbund coincided with his association with AEG. In addition to designing AEG's teakettles and lighting fixtures, he also designed their visual identity, the first known design system for an industrial corporation. Beginning with its logo, he designed a company typeface, color schemes, posters, advertisements, salesrooms, and manufacturing facilities. Every item was articulated over a specific set of proportions and linear elements, organizing AEG's visual presentation into a harmonic whole.

**Constructivism** The new visual language and its philosophy were attracting students and designers from abroad, as well as finding sympathetic participants. Russia's political upheaval of the early 1900s found a voice in abstraction; the pure geometry of a movement called Suprematism merged with Cubism and Futurism to generate Constructivism, an expression of Russia's quest for a new order. Seeking out instruction in Germany, a young Russian Constructivist, El (Lazar Markovich) Lissitzky, found himself in Darmstadt studying architecture, absorbing the rationalist aesthetic that was prevalent there. His studies kept him in Western Europe throughout World War I and for the duration of the Russian Revolution. In 1919, while the Bolsheviks were fighting for domination in the post-Tsarist civil war, Lissitzky went home and applied himself to politically driven graphic design that was characterized by dynamic, geometrically organized composition. His seminal poster, *Beat the Whites with the Red Wedge*, epitomizes the abstract communicative power of form and typifies the work of the Russian avant-garde from this period.

**Kandinsky**  
Poster

Herbert Bayer

©2003 Artists Rights Society (ARS) New York/  
VG Bild-Kunst, Bonn



**The Bauhaus and the New Order** As the war in Europe ended, designers and architects turned their attention to rebuilding and moving forward. In Germany, the 1919 reopening of the formerly prestigious Weimar Arts and Crafts School began with the appointment of architect Walter Gropius, one of Peter Behrens's former apprentices, as its new director. Gropius recast the school as the *Staatliches Bauhaus*—the State Home for Building. Here, experimentation and rationalism became the tools for building the new social order. Although the curriculum initially drew on expressionism—influenced by the *Blaue Reiter* painters who developed the preliminary training courses, Johannes Itten and Wassily Kandinsky—it gradually moved away from the personal and painterly.

The Bauhaus students and faculty became influenced by the Swiss painter Theo van Doesburg, whose de Stijl movement followed a strict dogma of geometry. Van Doesburg made contact with Gropius in 1920, and although Gropius decided against hiring him because of his overt dogma, van Doesburg contributed significantly to the aesthetic change in the Bauhaus by moving to Weimar and hosting discussions and lectures. Laszlo Moholy-Nagy, a Hungarian Constructivist, eventually replaced Itten as head of the preliminary course in 1923, when the Bauhaus moved to its new building in Dessau. In the type shop, Moholy's experimentation with asymmetrical layouts, photomontage, and elements from the type case expanded the geometric expression of Modernism in graphic



design. Moholy and a student, Herbert Bayer, used bars, rules, squares, and type asymmetrically composed on a grid as the basis of a new typography. Lissitsky returned from Russia numerous times, establishing contact with the Bauhaus and participating in lectures, book designs, and exhibitions. His 1924 book, *The Isms of Art*, is a watershed in grid development. Separated by heavy rules, the concurrently running text in three languages is organized into columns; images, captions, and folios are integrated into the overall structure, placed according to a distinct set of horizontal and vertical alignments.

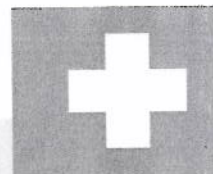


**Disseminating Asymmetry** As pervasive as these developments in design seem, they had yet to be assimilated into mainstream design practice. The use of asymmetric composition, sans serif typefaces, and geometric organization of information were known to a relative few in the arts and education. For the most part, the commercial world was oblivious. Developments in American and European advertising had helped introduced columnar composition into production of newspapers and periodicals; most printers and designers, however, were still visually in the nineteenth century. A young calligrapher, Jan Tschichold, changed that. While working as a staff designer for the German publisher Insel Verlag, Tschichold happened upon the first Bauhaus exhibition of 1923. Within a year he had assimilated the school's typographic approach and abstract sensibility. In 1925, he designed a twenty-four-page insert for the *Typographische Mitteilungen*, a German printers' magazine, which demonstrated these ideas to a large audience of typesetters, designers, and printers. "Elementare Typographie," as it was titled, generated a tremendous enthusiasm for asymmetric and grid-based layout.

Tschichold advocated a reductive and intrinsically functional aesthetic. He asserted that stripping away ornament, giving priority to sans serif type that made the structure of letterforms explicit, and creating compositions based on the verbal function of words were goals that would liberate the modern age. Negative spaces, the intervals between areas of text, and the orientation of words to each other formed the basis for design consideration. Taking his cues from Lissitsky and the Bauhaus, he deliberately built his compositions on a system of vertical and horizontal alignments, introducing hierarchical grid structure to order and creating space in documents from posters to letterheads. As early as 1927, the year before he published his landmark *Die Neue Typographie (The New Typography)*, Tschichold codified this idea of structure and advocated its use to standardize printing formats. The current European DIN (*Deutsches Institut für Normung*, the German Institute for Standardization) system of paper formats—in which each format, folded in half, yields the next-smaller format—is based on this system.

**Toward Neutrality** The developing design aesthetic in Europe was abruptly sidetracked, however, in the 1930s. Designers and artists who used the new visual language were arrested or forced to leave as the Nazis gained power and labeled them degenerates. The Bauhaus officially closed in 1932, and Moholy-Nagy, Gropius, Mies van der Rohe (Peter Behrens's other apprentice from before WWI), Bayer, and others left the continent for America; Tschichold, after being arrested and held by the Nazis for a short period, moved to Switzerland.

Switzerland remained neutral and generally unaffected by the war; its mountainous terrain and iron grip on international banking kept it safe from being overrun by the Nazis. The Swiss economy had gradually come to depend on services and craftsmanship that it could export; the country's small size had also deeply ingrained a famous determination to create order. Zurich and Basel were the cultural centers of the country; Zurich's banking and technology industries were the counterpart to Basel's thousand-year artistic heritage of drawing and book arts.





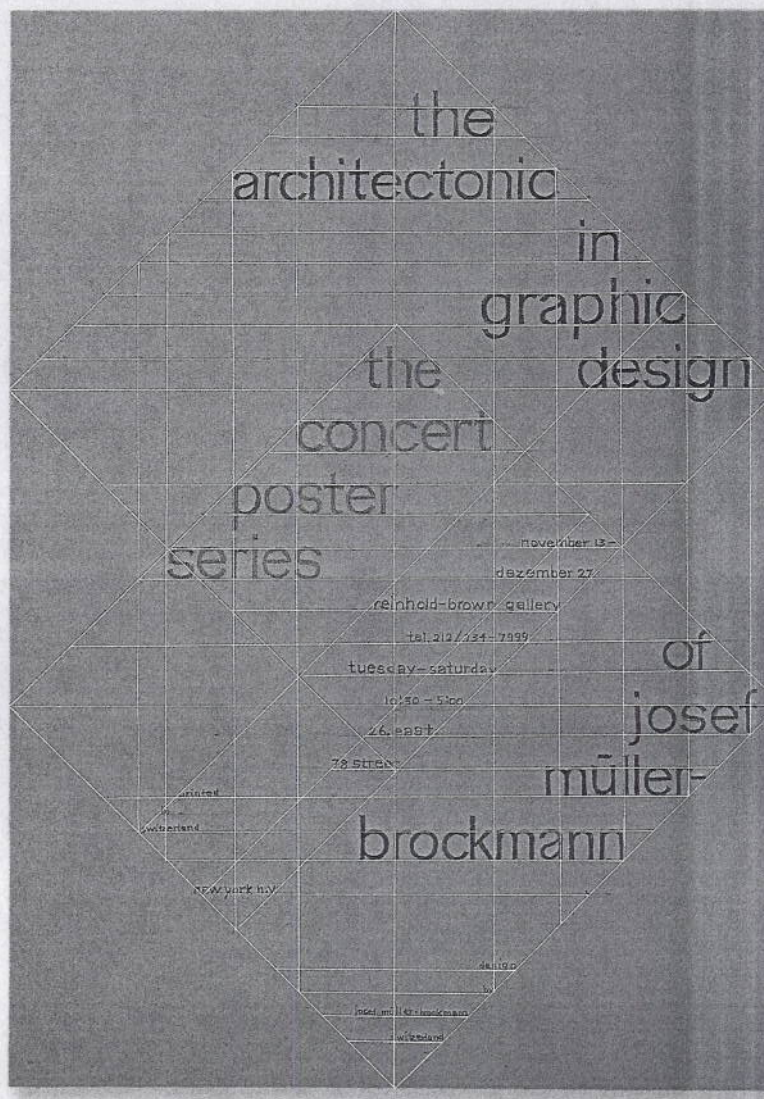
**Büro**  
Poster  
Theo Ballmer

Courtesy of Reinhold-Brown  
Gallery New York, NY



**The Architectonic in  
Graphic Design**  
Poster

Josef Müller-Brockmann  
Courtesy of Reinhold-Brown Gallery  
New York, NY



**Neue Grafik and the Will to Order** This more austere approach was also taken up by Josef Müller-Brockmann, Carlo Vivarelli, Hans Neuberg, and Richard Paul Lohse who, in their individual practices, were actively seeking a universal visual expression. As editors of the Zurich-published *Neue Grafik*, they collaborated in exposing this international style to the rest of the world. The grid created for *Neue Grafik* contained four columns and three horizontal bands, or spatial zones, which organized all of the content, including images. When it was first iterated, *Neue Grafik* marked a development in grid-based design that was already in the making: the realization of a module—a small unit of space which, through repetition, integrates all parts of a page. The width of a module defines a column-width, and its height defines the depth

of paragraphs and, therefore, rows. Groups of modules are combined into zones that may be assigned a given purpose. In complex publishing projects, exhibits, and single-format posters, Müller-Brockmann and his colleagues developed modular systems from the content of their projects and implemented them with rigorous discipline. Müller-Brockmann forsook imagery in favor of pure constructions of type based on grids. In 1960, he published his first book *The Graphic Artist and His Design Problems* in which he first describes this form of grid-based design. His second book *Grid Systems in Graphic Design* is nothing short of a manifesto: "The grid system implies the will to systematize, to clarify, the will to penetrate to the essentials... the will to cultivate objectivity rather than subjectivity."

Along with Tschichold, several Bauhaus students had come to Switzerland. Max Bill, who had begun school at the Kunstgewerbeschule in Zurich and had studied at the Bauhaus between 1927 and 1929, returned home in 1930; another Bauhaus student, Theo Ballmer, had also worked in the type shop. The influence of Ballmer, Tschichold, and Bill was strong. While Swiss designers had been developing a tradition that emphasized reductive techniques and simplification, that direction had focused on symbolic representation, epitomized by the work of *plakstijl* designer Ernst Keller. Tschichold eventually turned to a classical typographic approach with more humanist attributes, but until the early 1940s he was still an advocate of asymmetry and grid-based composition. Ballmer and Bill continued to develop constructive ideas in their work based on strict mathematical measurement and spatial division. Max Bill's contribution was twofold: first, by applying his math-based theories to professional projects in advertising and corporate identity; and second, by instituting the grid through helping to found the Ulm School of Applied Arts in Germany in 1950. Bill's work and teaching would help to ingrain the grid in generations of designers.



**Grid Systems in  
Graphic Design**  
Book spread

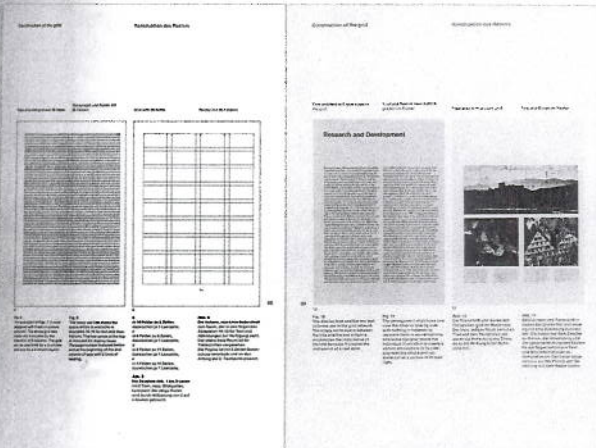
Josef Müller-Brockmann

Originally published by  
Niggli Verlag, Zurich, 1962

**The New Swiss Film  
Poster**

Josef Müller-Brockmann

Reproduced from *Grid Systems  
in Graphic Design*, published  
by Niggli Verlag, Zurich, 1962



**Radikale Liste 1**

Poster

Ernst Ruder

Reproduced from *Typography*,  
published by Niggli Verlag,  
Zurich, 1960

für  
einen geeinten  
starken  
sozialen  
Kanton  
Basel  
Radikale  
Liste  
1

Garanten  
für eine gute  
Verfassung:



**The Basel School** In Basel, the *Allgemeine Gewerbeschule* (or Basel School of Design) was contributing to the development of the International Style through an approach that appeared to be somewhat at odds with that of Zurich designers. Its director, Armin Hoffmann, had been a student of Ernst Keller's, and fostered an intuitive method of composition based on symbolic form and contrasts between optical qualities in abstraction: light and dark, curve and angle, organic and geometric. Integrating type with image played an important role in the school's curriculum, however. In 1947, Zurich-trained Emil Ruder joined the AGS as a typography teacher. Ruder advocated a balance between form and function, rigorously exploring the nuances of typeface and optical contrast in addition to systematic, overall grid structures. His methodology instilled an exhaustive process of visual problem solving in his students that helped further the dissemination of the grid. One of these many students was Karl Gerstner, who went on to form his own practice in Zurich and contributed to the evolution of the grid into a mainstay of modern design practice. In 1968, Gerstner published his first book, *Designing Programmes*. "The typographic grid," he wrote, "is a proportional guideline for text, tables, pictures, etc. It is a formal program a priori for 'x' unknown contents. The problem: to find the balance between a maximum of conformity with a maximum of freedom. Or: the highest number of constants combined with the greatest possible variability."

**The Corporate Grid** Grid use began to dominate European and American design during and after the 1960s. It was an especially effective way to orchestrate communications programs for large organizations, events, or corporations. Max Bill, Müller-Brockmann, Otl Aicher, and other exponents of the International Style were joined in their efforts by their Dutch, English, Italian, German, and American counterparts. In the Netherlands, the movement toward rational, program-oriented design was spearheaded by Wim Crouwel, Ben Bos, and Bruno Wissing, whose firm Total Design became a model in its practice of grid-based communications programs for corporations and cultural institutions. In America, students of the Swiss schools and a number of European emigrants were bringing



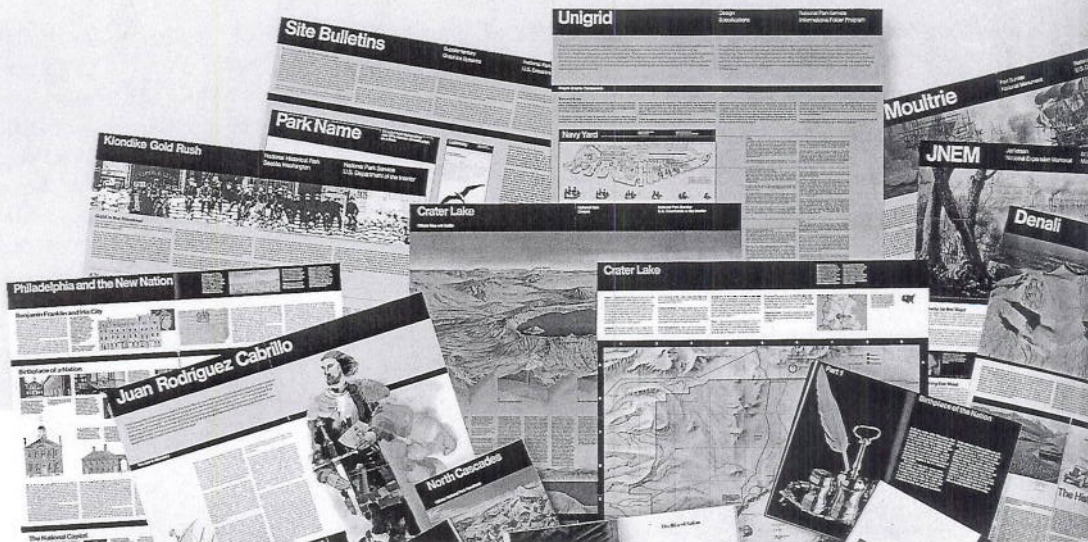
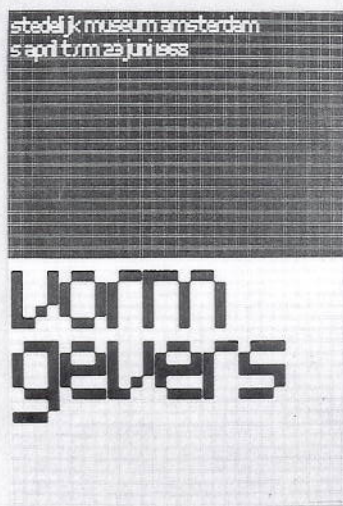
Vorm Gevers  
Designers  
Poster  
Wim Crouwel  
Courtesy of Total Design,  
Amsterdam

Unigrid  
Publication system  
Massimo Vignelli  
Courtesy of Massimo Vignelli

Piccolo Teatro di Milano  
Theater season schedule  
Massimo Vignelli  
Courtesy of Massimo Vignelli

the International Style—and the grid—to a vast audience. Paul Rand, the pioneer of Modern design in America in the early 1940s, had been instrumental in convincing business that design was good for them; his clients and those of other designers had gradually become familiar with the idea of systems to help organize their public images. In his 1965 design manuals for Westinghouse, Rand developed complex grids to ensure continuity in such diverse media as packaging, print advertising, and television. The German designer Otl Aicher implemented a program of even greater precision for Lufthansa, the German airline. Collaborating with Tomás Gonda, Fritz Quereng, and Nick Roericht, Aicher anticipated Lufthansa's every potential need, standardizing formats and rigorously enforcing the grid to unify communications of different scale, materials, and production constraints. Detailed manuals and measurements ensured visual uniformity in every application.

The idea of a totality in design, based on a grid, also found expression in the work of Massimo Vignelli and his wife, Lella, who had founded an office for design in Milan in 1960. Both trained as architects, they established their vision of a seamlessly organized, systematic structural approach early in their careers. Massimo, in particular, had begun extensive exploration of grid structures for various cultural organizations and corporate entities in Milan. These early projects guided Vignelli toward an approach that focused on dividing space within a modular grid into semantically distinct zones. The additional system of division allowed greater focus within the overall modular structure, helping to clarify complex informational material. By giving these horizontal divisions visual weight in the form of solid bands, the eye could be taught to direct itself to find specific information. Vignelli helped found the design collaborative Unimark International in 1965, following his belief that design should reject the individual impulse for expression in favor of developing overall systems. Growing to roughly four hundred employees in forty-eight countries, Unimark systematized and standardized communications for a legion of corporate giants, among them Xerox, J.C. Penney, Alcoa, Ford, and Steelcase. In 1971, Massimo and Lella established Vignelli Associates in New York after Unimark disbanded. Their new company pursued a similar philosophy; the grid formed

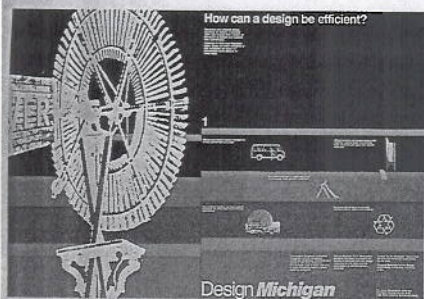




*Design in Michigan*  
Poster, one of a series  
Katherine McCoy  
Courtesy of Katherine McCoy

*Citibank*  
Corporate identity manual  
Anspach Grossman Portugal  
Courtesy Enterprise IG

*Octavo*  
Publication  
8vo  
Courtesy of Simon Johnston

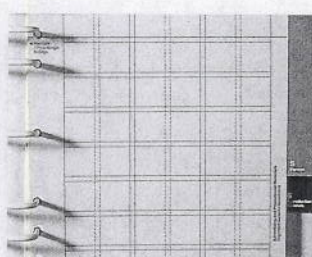
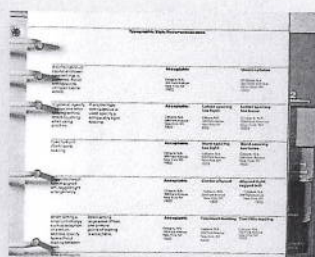
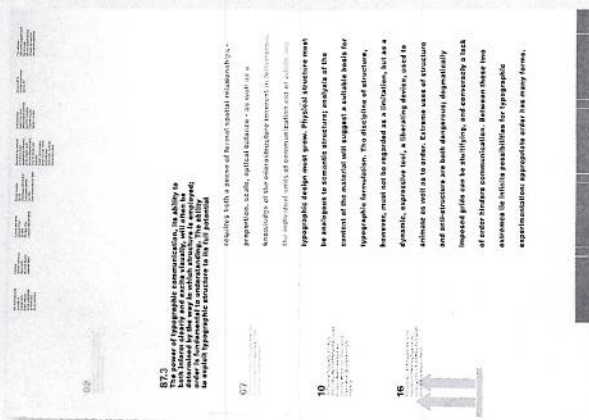


the underpinning of many of their endeavors in corporate identity, publication, and book design and interiors. In 1977, as part of the United States Government's Federal Design Improvement Program, Vignelli developed a system to unify publications for the National Park Service. Called Unigrd, the system established a modular grid, divided by horizontal bands, which encompassed twelve formats and could be imposed on a single standard-sized sheet of paper. This organization reduced paper waste, production time, and a number of other problems, allowing individual designers within and outside the National Park Service to concentrate on the creative aspects of designing individual brochures and posters.

By the late 1970s, formatting corporate communications in a grid was an expected approach to achieving visual continuity. Corporate identity firms like Anspach Grossman Portugal in New York City typified this approach with its 1976 identity program for Citibank and similar corporate clients. The International Style had come to be an accepted part of what graphic design was about. Designers also began to use the grid as an end in itself, and they exploited the visual potential of the form for its own sake. Radical experimentation based on grid structures during the 1980s and 1990s eventually led to examination of other kinds of organizational methods; designers and design educators like April Greiman (who studied typography in Basel) and Katherine McCoy (an industrial designer who came to graphic design through an early stint at Unimark), spearheaded explorations outside the realm of rational structure. This kind of deconstruction was also eventually assimilated into common practice alongside strictly grid-based work and other entirely antistructural ideas.

The grid has come to be seen as one of many tools that designers can use to help them communicate. In the 1980s and 1990s, the British design group 8vo helped reestablish awareness of structural thinking through their periodical journal *Octavo*, which addressed typographical issues in a series of eight editions. Amidst a proliferation of new approaches that owes some debt to the digital revolution, newer firms like MetaDesign, Una, and Method have steadfastly continued to investigate organizational methods that derive from the International Style.

As we move into the twenty-first century, the use of grids that developed in Europe over the last 150 years has continued to play a role in graphic design. The Internet has proven to be a medium that can benefit from grid-based thinking as a way of simplifying the vertiginous act of navigating through interactive information. How media and design will develop over the next 150 years is difficult to imagine, given its recent pace—but the typographic grid is likely to help designers structure communications for some time to come.





Henry Magaziner  
Typography exercises  
Students of Chris Myers,  
University of the Arts,  
Philadelphia:  
Adam Hetherington  
Nikki Scoggins  
Jesse Taing

## Grid Basics

### A Workshop in Structural Designing

All design work involves problem solving on both visual and organizational levels. Pictures and symbols, fields of text, headlines, tabular data: all these pieces must come together to communicate. A grid is simply one approach to bringing those pieces together. Grids can be loose and organic, or they can be rigorous and mechanical. To some designers, the grid represents an inherent part of the craft of designing, the same way joinery in furniture making is a part of that particular craft. The history of the grid has been part of an evolution in how graphic designers think about designing, as well as a response to specific communication and production problems that needed to be solved. A corporate literature program, for example, is a late twentieth-century problem with complex goals and requirements. Among other things, a grid is suited to helping solve communication problems of great complexity.

**The benefits of working with a grid are simple: clarity, efficiency, economy, and continuity.**

Before anything else, a grid introduces systematic order to a layout, distinguishing types of information and easing a user's navigation through them. Using a grid permits a designer to lay out enormous amounts of information, such as in a book or a series of catalogues, in substantially less time because many design considerations have been addressed in building the grid's structure. The grid also allows many individuals to collaborate on the same project, or on series of related projects over time, without compromising established visual qualities from one project to the next.

How do grids work?

When are they appropriate?

Why use them at all?



Exploring the basics of typographic construction helps yield an understanding of the dynamic visual qualities that are inherent in the forms themselves. Within the format, alignments between elements

create structure. In these compositions, space is divided based on content: like information is grouped together, disparate information is separated.

Changes in weight and scale introduce hierarchy—visual ordering—to the information. Sometimes the kind of information listed in a particular column is called out through the use of bolder weight; sometimes

a shift in alignment signals a change in importance. Within strict limitations, an enormous variety of possible layouts can be imagined. These, for example, all use the same type family and many of them use one size.

Henry Magaziner  
The Golden Age of Ironwork  
Hear Say, Readings by  
Contemporary Authors  
Wednesday, February 7, 2001  
7:00pm  
Borders  
1727 Walnut Street  
Philadelphia, PA 19103  
215.568.7400

## Henry Magaziner

The Golden Age of Ironwork

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February 7, 2001  
7:00 pm

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# magaziner

henry

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Authors

## Henry Magaziner

The  
Age  
Golden  
of  
Ironwork

February 7, 2001  
7:00 p.m.

Wednesday

**Breaking the Page into Parts** Building an effective grid for a given project means thoughtfully assessing that project's specific content in terms of the visual and semantic qualities of typographic space.

Typographic space is governed by a series of part-to-whole relationships. The single letter is a kernel, part of a word. Words together create a line; not just a line of thought but a line on the page, a visual element that establishes itself in the spatial field of the format. Placing a line of type in the blank landscape of a page instantly creates a structure. It's a simple structure, but one with a direction, a movement and, now, two defined areas of space: one space above the line and one space below.

One line after another, after another, becomes a paragraph. It's no longer simply a line, but a shape with a hard and a soft edge. The hard edge creates a reference to the page, and as it stretches out in depth, the paragraph becomes a column, simultaneously breaking space and becoming a space in itself. Columns repeated or varied in proportion create a rhythm of interlocking spaces in which the format edge is restated, countered, and restated again. The voids between paragraphs, columns, and images help to establish the eye's movement through the material, as do the textural mass of the words they surround.

Alignments between masses and voids visually connect or separate them. By breaking space within the compositional field, the designer stimulates and involves the viewer. A passive composition, where intervals between elements are regular, creates a field of texture that is in

stasis. By introducing changes, such as a larger interval between lines or a heavier weight, the designer creates emphasis within the textural uniformity. The mind perceives that emphasis as some kind of importance. Creating importance establishes an order, or hierarchy, between elements on the page, and each successive change introduces a new relationship between the parts. Visual shifts in emphasis within the hierarchy are inseparable from their effect on the verbal or conceptual sense of the content. A designer has unlimited options for making changes in type size, weight, placement, and interval to affect hierarchy and, therefore, the perceived sequence of the information. The grid organizes this relationship of alignments and hierarchies into an intelligible order that is repeatable and understandable by others.



## Anatomy of a Grid: The Basic Parts of a Page

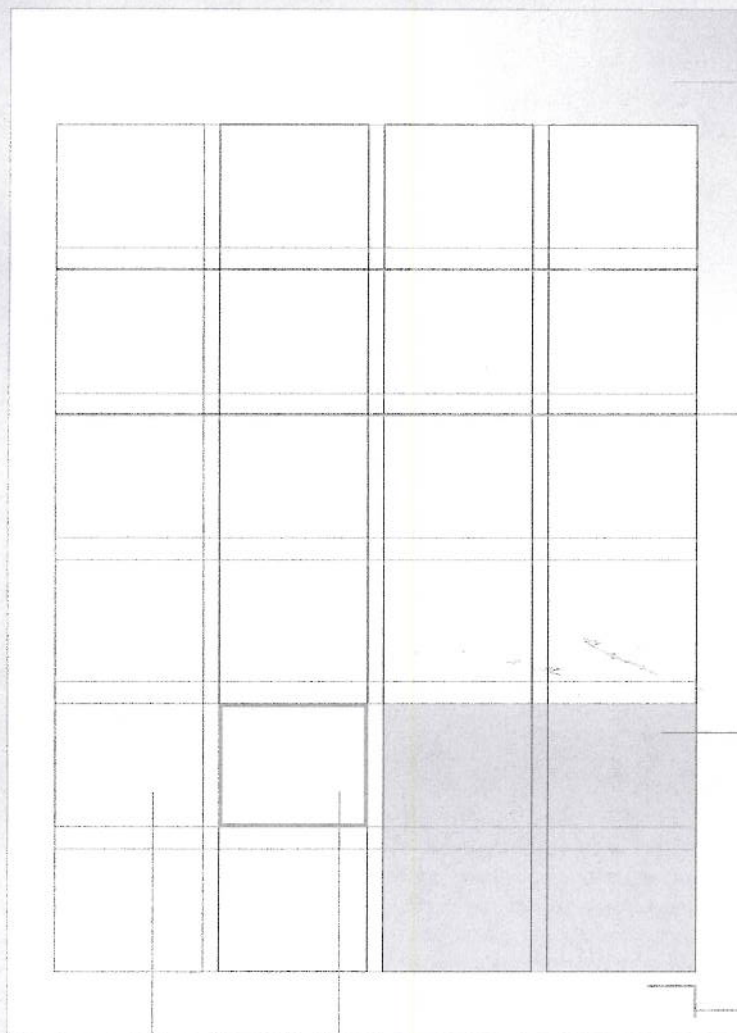
A grid consists of a distinct set of alignment-based relationships that act as guides for distributing elements across a format. Every grid contains the same basic parts, no matter how complex the grid becomes. Each part fulfills a specific function; the parts can be combined as needed, or omitted from the overall structure at the designer's discretion, depending on how they interpret the informational requirements of the material.

**Building an Appropriate Structure** Working with a grid depends on two phases of development. In the first phase, the designer attempts to assess the informational characteristics and the production requirements of the content. This phase is extremely important; the grid is a closed system once it is developed, and in building it the designer must account for the content's idiosyncrasies, such as multiple kinds of information, the nature of the images, and the number of images. Additionally, the designer must anticipate potential problems that might occur while laying out the content within the grid, such as unusually long headlines, cropping of images, or dead spots left if the content in one section runs out.

The second phase consists of laying out the material according to the guidelines established by the grid. It's important to understand that the grid, although a precise guide, should never subordinate the elements within it. Its job is to provide overall unity without snuffing out the vitality of the composition. In most circumstances, the variety of solutions for laying out a page within a given grid are inexhaustible, but even then it's wise to violate the grid on occasion. A designer shouldn't be afraid of his or her grid, but push against it to test its limits. A really well-planned grid creates endless opportunities for exploration.

Every design problem is different and requires a grid structure that addresses its particular elements. There are several basic kinds of grid, and as a starting point, each is suited to solving certain kinds of problems. The first step in the process is to consider which type of basic structure will accommodate the project's specific needs.





**Columns** are vertical alignments of type that create horizontal divisions between the margins. There can be any number of columns; sometimes they are all the same width, and sometimes they are different widths corresponding to specific information.

**Modules** are individual units of space separated by regular intervals which, when repeated across the page format, create columns and rows.

**Margins** are the negative spaces between the format edge and the content, which surround and define the live area where type and images will be arranged. The proportions of the margins bear a great deal of consideration, as they help establish the overall tension within the composition. Margins can be used to focus attention, serve as a resting place for the eye, or act as an area for subordinate information.

**Flowlines** are alignments that break the space into horizontal bands. Flowlines help guide the eye across the format and can be used to impose additional stopping and starting points for text or images.

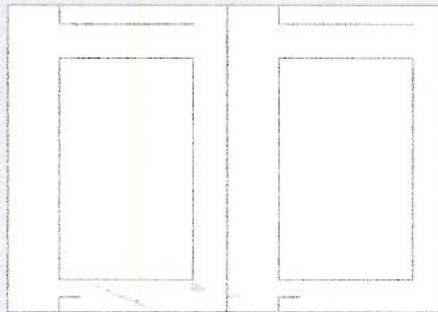
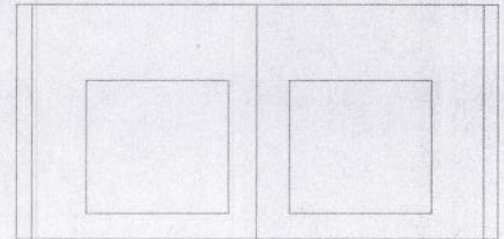
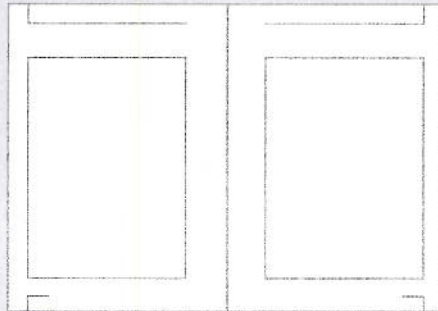
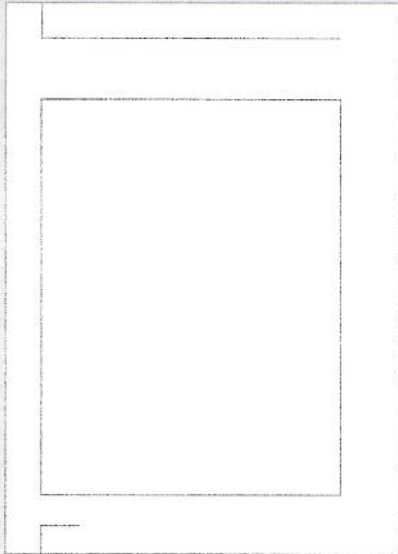
**Spatial zones** are groups of modules that together form distinct fields. Each field can be assigned a specific role for displaying information; for example, a long horizontal field might be reserved for images, and the field below it might be reserved for a series of text columns.

**Markers** are placement indicators for subordinate or consistently appearing text, like running heads, section titles, folios, or any other element that occupies only one location in any layout.



Simple variations in margin size hint at the possibilities in this simplest of grid types.

Dramatic margins create unexpected interest within this otherwise conventional manuscript grid.



## Manuscript Grid

The block, or manuscript, grid is structurally the simplest kind of grid. As its name implies, its base structure is a large rectangular area that takes up most of the page. Its job is to accommodate extensive continuous text, like a book or long essay, and it developed from the tradition of written manuscript that eventually led to book printing. It has a primary structure—the text block and the margins that define its position on a page—as well as a secondary structure that defines other essential details—the locations and size relationships of the running header or footer, chapter title, and page numbers, along with an area for footnotes, if appropriate.

Even within such a simple structure, care must be taken so the continuous type-texture can be read comfortably page after page. A large volume of type is essentially a passive gray composition. Creating visual interest, comfort, and stimulation is important to continuously engage the reader and to keep the eye from tiring too rapidly during long reading sessions.

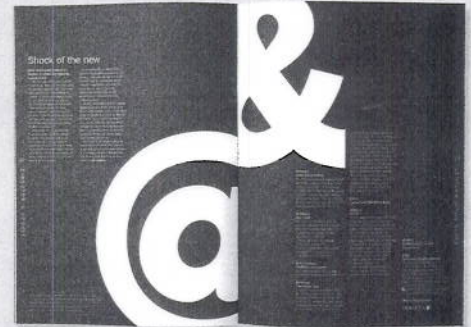
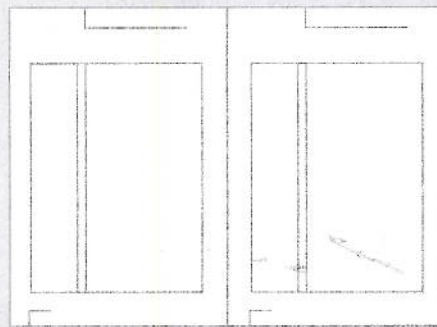
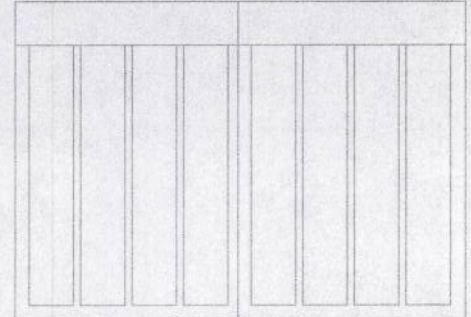
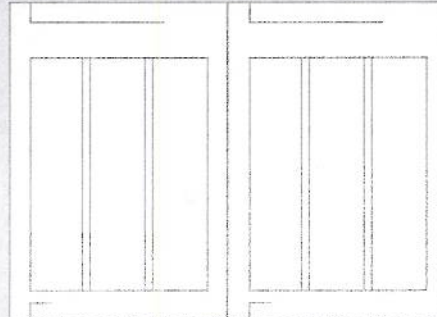
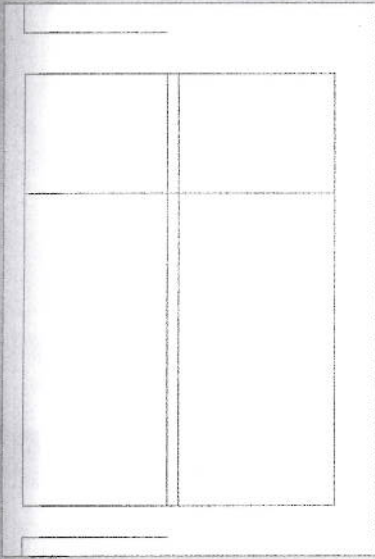
Adjusting the proportions of the margins is one way of introducing visual interest. Within a two-page spread, the interior margins have to be wide enough to prevent the text from disappearing down into the gutter. Classical grids mirror the text blocks left and right around a wider gutter margin. Some designers use a mathematical ratio to determine a harmonic balance between the margins and the weight of the text block. In general, wider margins help focus the eye and create a sense of calm or stability. Narrow lateral margins increase tension because the live matter is in closer proximity to the format edge. Although traditional manuscript grids use margins that are symmetrical in width, it's just as acceptable to create an asymmetrical structure, wherein the margin intervals are different. An asymmetrical structure introduces more white space for the eye to use as an area of rest; it may also provide a place for notes, spot illustrations, or other editorial features that don't occur regularly and, therefore, don't really warrant the articulation of a true column.

The size of the text type in the block—as well as the space between lines, words, and treatments of subordinate material—is of incredible importance. Considering the size of the text type and its spacing characteristics allows the designer to add additional visual interest by treating the subordinate material in contrasting yet subtle ways. Remember that tiny shifts in typographic color, emphasis, or alignment create enormous differences in how they're perceived in the overall hierarchy of the page; in this case, less is usually more effective.



Three-column grids and asymmetrical one/two-column grids are common in editorial layout.

A precise four-column grid doesn't necessarily preclude dynamic layout. In this particular spread, the scale change of typographic elements is a foil to the grid.



## Column Grid

Information that is discontinuous benefits from being organized into an arrangement of vertical columns. Because the columns can be dependent on each other for running text, independent for small blocks of text, or crossed over to make wider columns, the column grid is very flexible and can be used to separate different kinds of information. For example, some columns may be reserved for running text and large images, while captions may be placed in an adjacent column: this arrangement clearly separates the captions from the primary material, but allows the designer to create a direct relationship between the captions and the primary material.

The width of the columns depends on the size of the running text type. The goal is to find a width that accommodates a comfortable number of characters in one line of type at a given size. If the column is too narrow, excessive hyphenation is likely, and it will be difficult to achieve a uniform rag. At the other extreme, a column that is too wide for a given point size will make it difficult for the reader to find the beginnings

of sequential lines. By studying the effects of changing the type size, leading, and spacing, the designer will be able to find a comfortable column width. In a traditional column grid, the gutter between columns is given a measure,  $x$ , and the margins are usually assigned a width of twice the gutter measure, or  $2x$ . Margins that are wider than the column gutters focus the eye inward, easing tension between the column edge and the edge of the format. There are no rules, however, and designers are free to adjust the column-to-margin ratio to suit their tastes or intentions.

In a column grid, there is also a subordinate structure. These are the flowlines: vertical intervals that allow the designer to accommodate unusual breaks in text or image on the page and create horizontal bands across the format. The hangline is one kind of flowline: the top-most capline of the running text content. It defines the vertical distance from the top of the format at which column text will always start. Sometimes, a flowline near the top of the page

establishes a position for running headers, the pagination, or section dividers; additional flowlines in the middle or toward the bottom of the format can establish areas that the designer decides are for images only or for different kinds of concurrent running text, like a timeline, a subarticle, or a pull-quote.

When several kinds of information being handled in juxtaposition are radically different from each other, one option is to design a distinct column grid for each kind instead of attempting to build a single column grid. The nature of the information to be displayed might require one component grid of two columns and a second grid of three columns, both with the same margins. In this compound column grid, the middle column of the three-column grid straddles the gutter between the columns of the two-column grid. A compound column grid can be made up of two, three, four, or more distinct component grids, each devoted to content of a specific type.

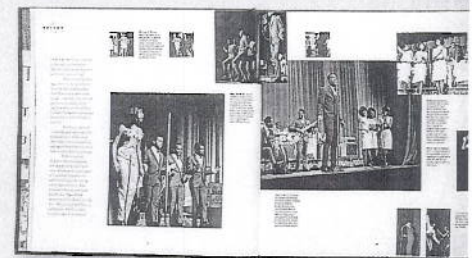
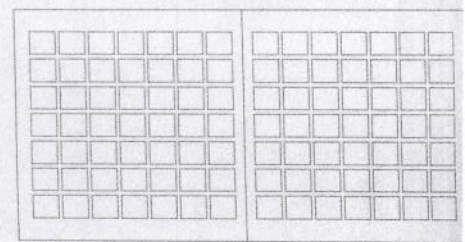
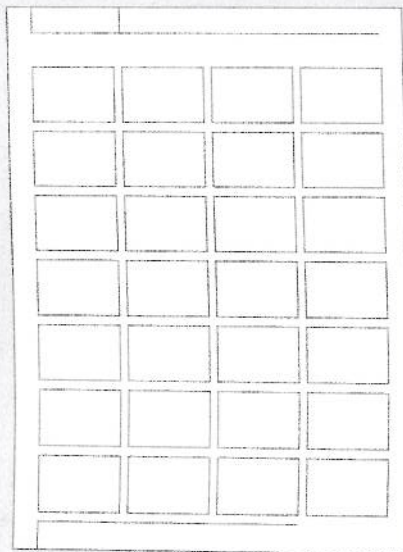


The Guardian  
Newspaper  
Pentagram UK

Headlines, pictures, and captions are all streamlined for production by this newspaper's modular grid.

The Motown Album  
Book  
Sheila deBretteville

An enormous variety of picture formats, text and captions are unified in a "scrapbook" presentation in this picture book.



## Modular Grid

Extremely complex projects require a degree of control beyond what a column grid will provide, and in this situation, a modular grid may be the most useful choice. A modular grid is essentially a column grid with a large number of horizontal flowlines that subdivide the columns into rows, creating a matrix of cells called *modules*. Each module defines a small chunk of informational space. Grouped together, these modules define areas called *spatial zones* to which specific roles may be assigned. The degree of control within the grid depends on the size of the modules. Smaller modules provide more flexibility and greater precision, but too many subdivisions can become confusing or redundant.

The module's proportions can be determined in any number of ways. Sometimes, for example, the module might be the width and depth of one average paragraph of the primary text at a given size. Modules can be vertical or horizontal in proportion, and this decision can be related to the kinds of images being organized or to the

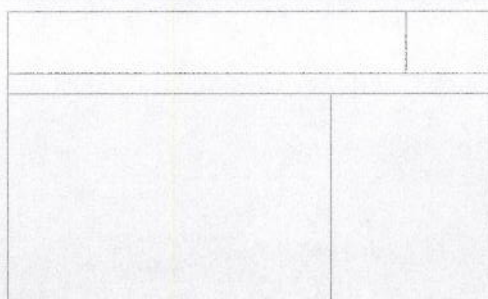
desired overall stress the designer feels is most appropriate. The margin proportions must be considered simultaneously in relation to the modules and the gutters that separate them. Modular grids are most often used to coordinate extensive publication systems. If the designer has the opportunity to consider all (or most) of the materials that are intended to be produced within a system, the formats can become an outgrowth of the module or vice versa. By regulating the proportions of the formats and the module in relation to each other, the designer achieves several goals. The interrelationship of the formats means they can be used harmoniously together; the formats are more likely to be able to be produced simultaneously and, therefore, much more inexpensively.

A modular grid also lends itself to the design of tabular information, like charts, forms, schedules, or navigation systems. The rigorous repetition of the module helps to standardize space in tables or forms and can also help to integrate them with the structure of surrounding text and image material.

Aside from its practical uses, the modular grid has developed a conceptual, aesthetic image that some designers find attractive. Between the 1950s and 1980s, the modular grid became associated with ideal social or political order. These ideals have their roots in the rationalist thinking of the Bauhaus and Swiss International Style, which celebrate objectivity and order, reduction to essentials, and clarity of form and communication. Designers who embrace these ideals sometimes use modular grids to convey this rationalism as an interpretive overlay to a given communication. Even projects with simple informational needs or single formats can be structured with a rigid modular grid, adding additional meaning of order, clarity, and thoughtfulness or an urban, mathematical, or technological feel.



Web pages are the most common example of hierarchic grids. The alignments change depending on the content but remain proportionally integrated.



## Hierarchical Grid

Sometimes the visual and informational needs of a project require an odd grid that doesn't fit into any category. These grids conform to the needs of the information they organize, but they are based more on an intuitive placement of alignments customized to the various proportions of the elements, rather than on regular repeated intervals. Column widths, as well as the intervals between them, tend to vary.

Developing a hierarchical grid begins by studying the various elements' optical interaction in different positions spontaneously, and then by determining a rationalized structure that will coordinate them. Careful attention to the nuances of weight change, size change, and position on the page can yield an armature that is repeatable over multiple pages. Sometimes a hierarchical grid unifies disparate elements or creates a superstructure that opposes organic elements in a single-instance format like a poster. A hierarchical grid can also be used to unify sides of packages or to create new visual arrangements if they're displayed in groups.

Web pages are examples of hierarchical grids. During the Web's early development, many of the variables of Web-page composition were unfixable because of the end user's browser settings. Even today, with the control to establish fixed margins, the dynamic content that drives most Web sites, along with the continued option of resizing the browser window, requires a flexibility of width and depth that precludes a strict modular approach, but still requires a standardization, or templating, of alignments and display areas.

This kind of grid, whether used to build books, posters, or Web pages, is an almost organic approach to the way information and elements are ordered that still holds all of the parts together architecturally in typographic space.



## Variation and Violation

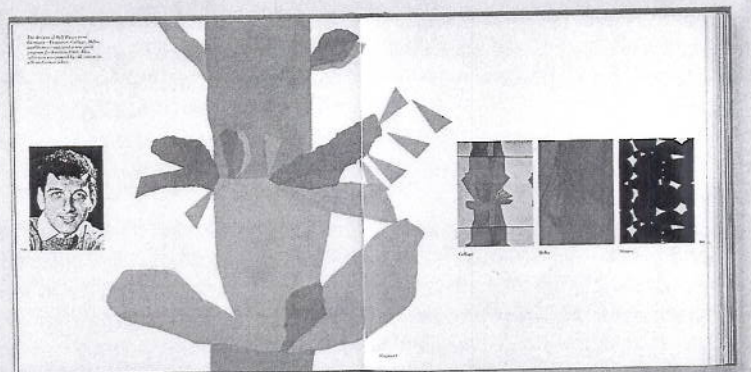
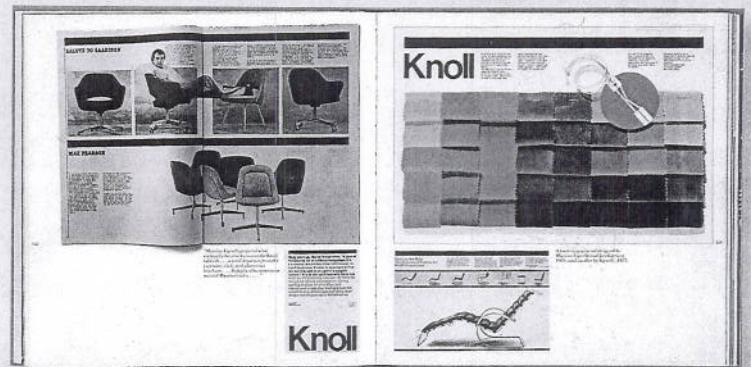
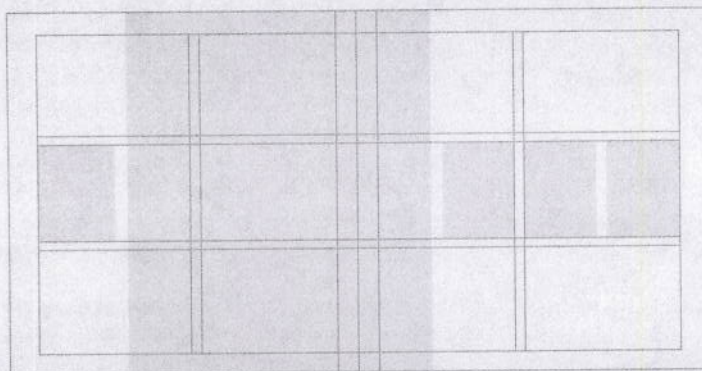
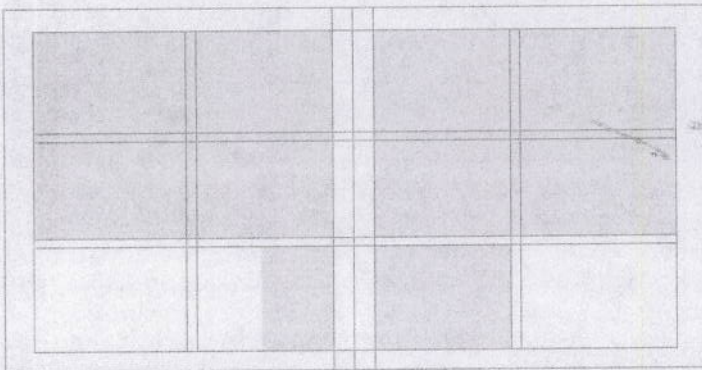
### Sequencing in Grid-Based Layouts

A grid is truly successful only if, after all of the literal problems have been solved, the designer rises above the uniformity implied by its structure and uses it to create a dynamic visual narrative of parts that will sustain interest page after page. The greatest danger in using a grid is to succumb to its regularity. It's important to remember that the grid is an invisible guide that exists on the "bottommost level" of the layout; the content happens on top of it, sometimes constrained and sometimes free to move. Grids don't make dull layouts—designers do.

Once a grid is in place, it's a good idea to sort all of the project's material spread by spread to see how much is appearing in each. A storyboard of thumbnails for each spread in the project (or each frame of an animation or each Web page) can be very helpful for getting a sense of what content is going where, what content or imagery still needs to be developed, and what each spread will look like in tandem with the others. Here, the designer can test layout variations on the grid and see the result in terms of pacing—the rhythm of the layouts. Can there be a visual logic to how elements interact with the grid from page to page? For example, do pictorial elements alternate in position from one spread

to another? Is there a rhythm to how the overall darkness and lightness of each spread relates to the others? Perhaps there's a slow build from simple to more complex arrangements or a staggered, dynamic alternation of density over the range of spreads.

By creating a rhythmic or sequential logic among the spreads in the way they relate to the grid, each spread can have a distinct visual presentation but still work as part of the whole. The parts have unity imparted by the grid working underneath them.



The effective use of a simple modular column grid is clearly demonstrated by the page spreads of this book. The grid is very regular, but the designer's use of alternating spatial zones for the

locations of images from page to page accomplishes three goals: the variation in placement of images creates visual interest; it serves to reinforce the grid by making its presence known in

multiple ways; and it creates a rhythmic sense of unity between the pages, a pacing and cadence that adds to the experience of reading and seeing.



The designer articulates this modular grid in two distinct ways to give character to individual sections. The page spread at top shows building models, diagrams, and notes on a white field, where parcels of information are rigorously bound to the module's proportions. In the page spread below, the module is subordinated to dramatic divisions of space where columnar information and photographic images are allowed to float in a dynamic, indeterminate environment.

