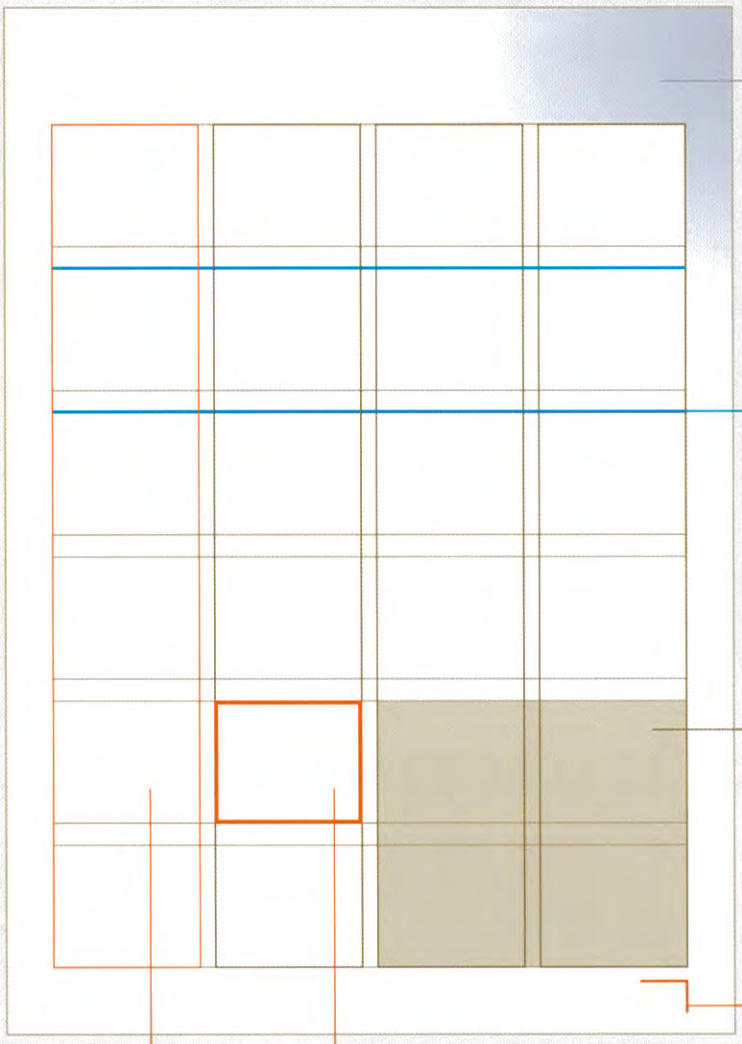
Anatomy of a Grid: The Basic Parts of a Page

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.



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.

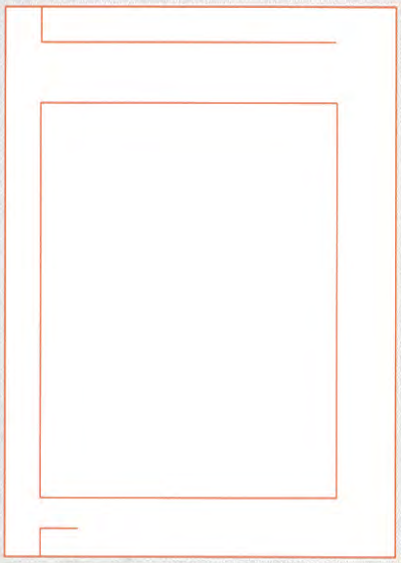
Flowlines are alignments that break the space into horizontal bands. Flowlines help guide the eye across the format and can be used to impose additional stopping and starting points for text or images.

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.

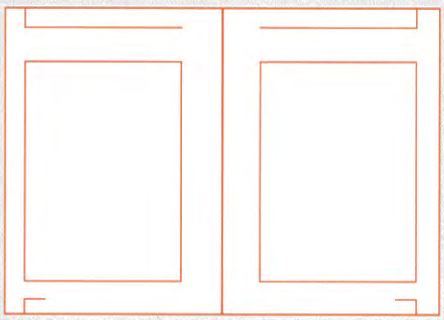
Markers are placement indicators for subordinate or consistently appearing text, like running heads, section titles, folios, or any other element that occupies only one location in any layout.

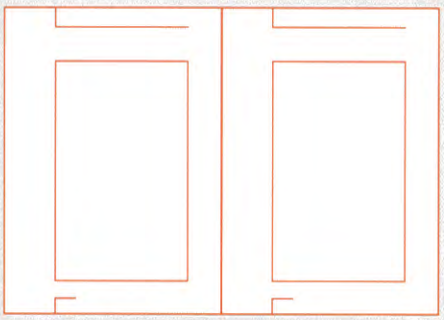
Columns are vertical alignments of type that create horizontal divisions between the margins. There can be any number of columns; sometimes they are all the same width, and sometimes they are different widths corresponding to specific information.

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



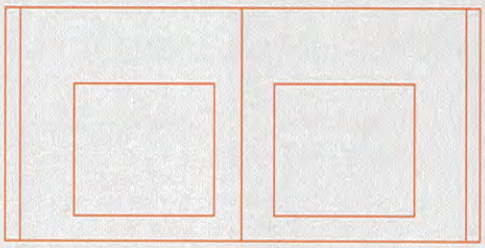
Simple variations in margin size hint at the possibilities in this simplest of grid types.





Lang & Schwarz
Annual Report
In(corporate GmbH

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



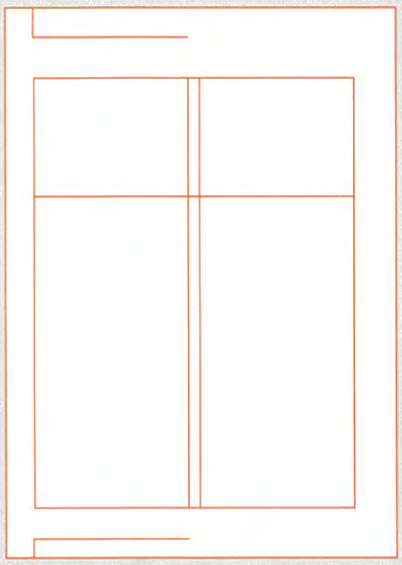
Manuscript Grid

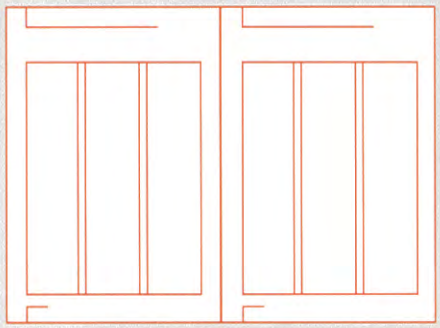
The block, or manuscript, grid is structurally the simplest kind of grid. As its name implies, its base structure is a large rectangular area that takes up most of the page. Its job is to accommodate extensive continuous text, like a book or long essay, and it developed from the tradition of written 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.

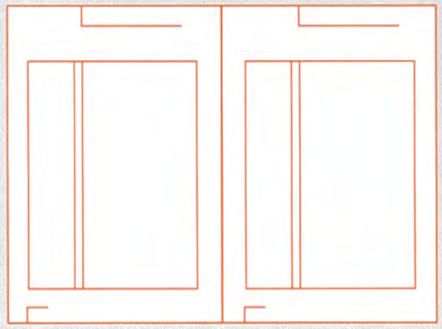
Even within such a simple structure, care must be taken so the continuous type-texture can be read comfortably page after page. A large volume of type is essentially a passive gray composition. Creating visual interest, comfort, and stimulation is important to continuously engage the reader and to keep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

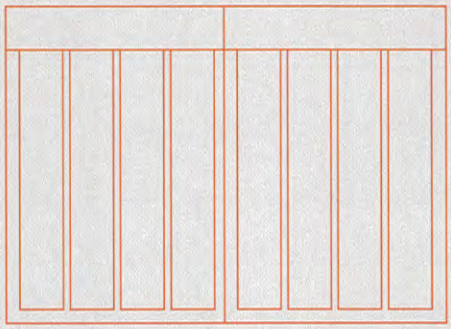






Three-column grids and asymmetrical one/two-column grids are common in editorial layout.

Ampersand
Annual design showcase
Frost Design



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.

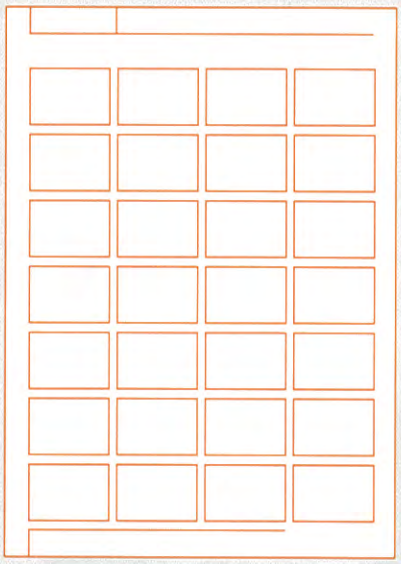
Column Grid

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 2*x*. 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.

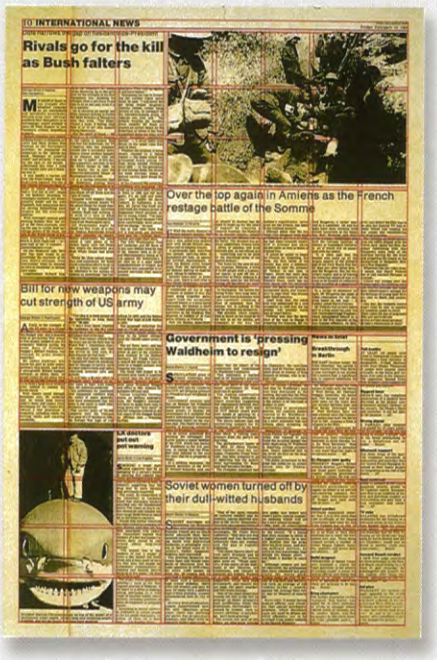
In a column grid, there is also a subordinate structure. These are the flowlines: vertical intervals that allow the designer to accommodate unusual breaks in text or image on the page and create horizontal bands across the format. The hangline is one kind of flowline: the topmost capline of the running 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



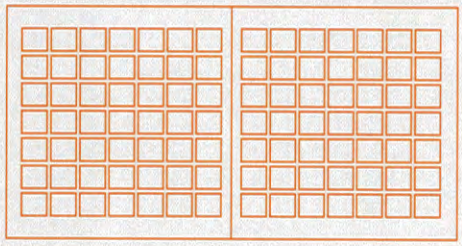
The Guardian
Newspaper
Pentagram UK

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.

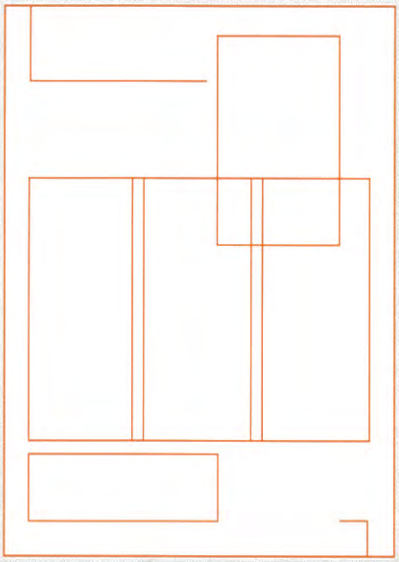
The module's proportions can be determined in any number of ways. Sometimes, for example, the module might be the width and depth of one average paragraph of the primary text at a given size. Modules can be vertical or horizontal in proportion, and this decision can be related to the kinds of images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

www.princetonart.org
Internet site
Swim Design

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.

Knoll Design
Book
Vignelli Associates

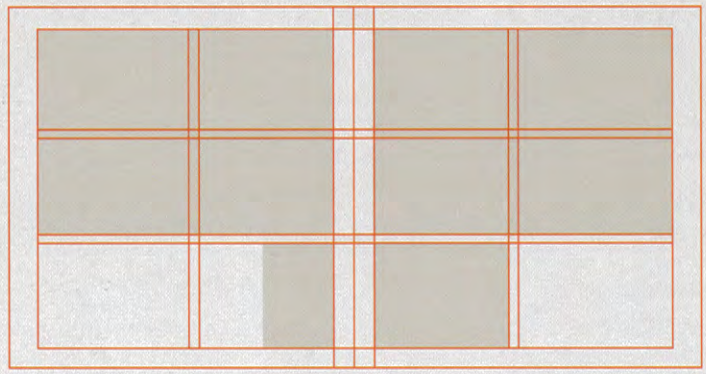
Variation and Violation

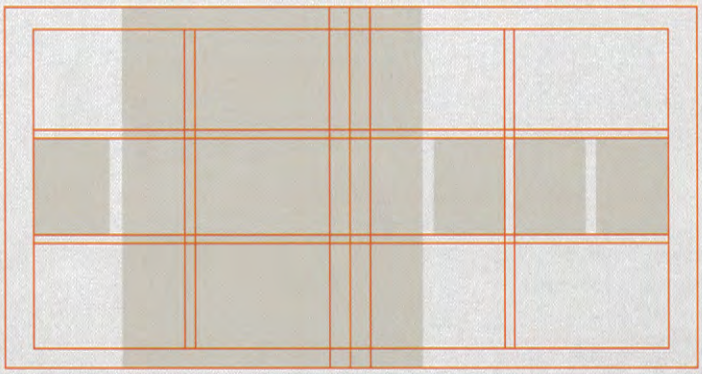
Sequencing in Grid-Based Layouts

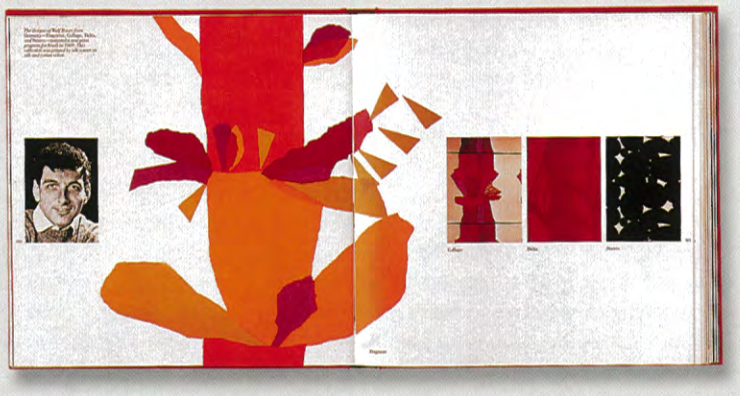
A grid is truly successful only if, after all of the literal problems have been solved, the designer rises above the uniformity implied by its structure and uses it to create a dynamic visual narrative of parts that will sustain interest page after page. The greatest danger in using a grid is to succumb 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.

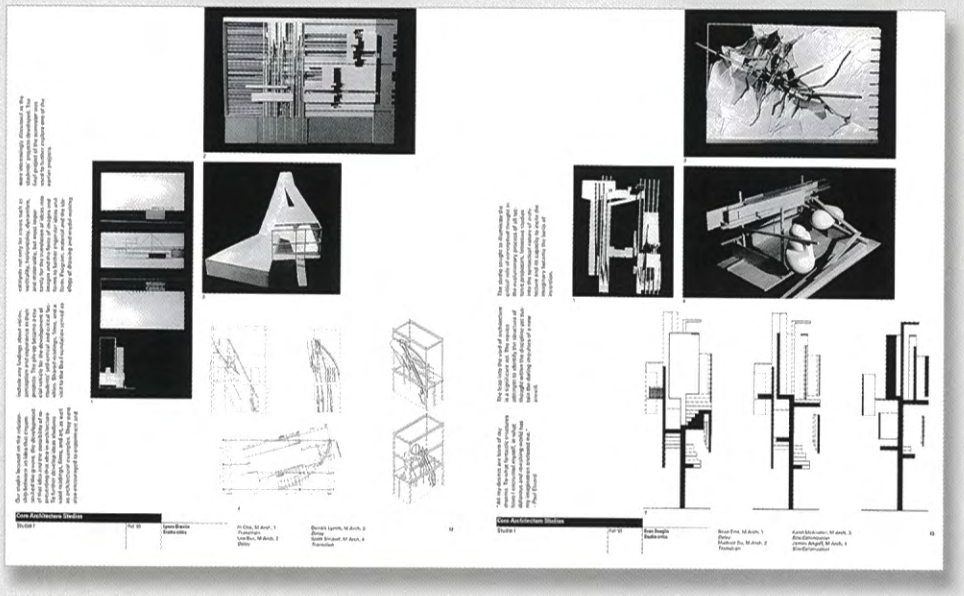
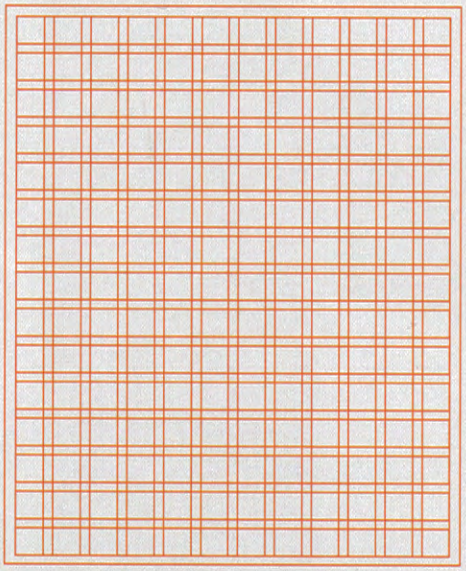
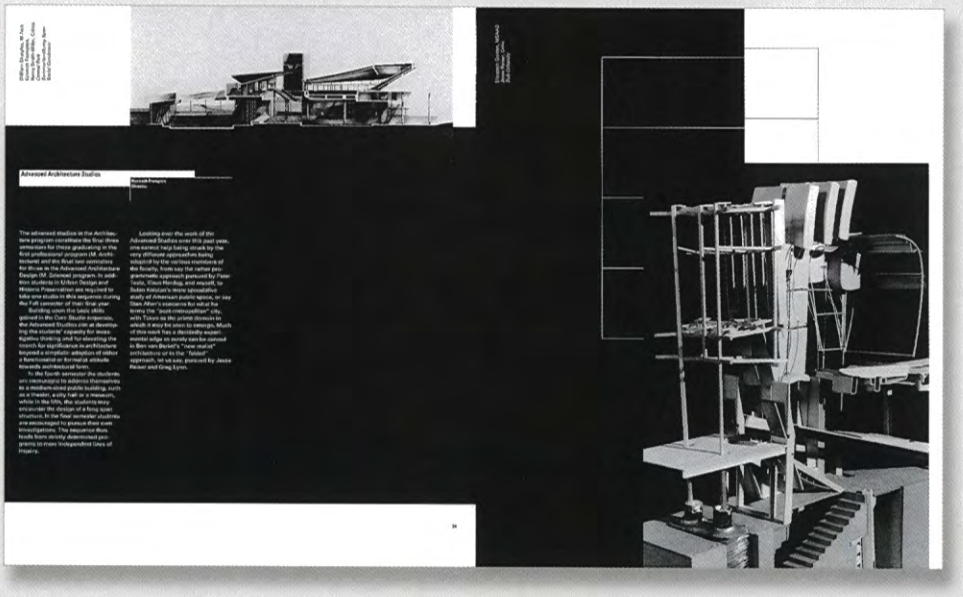
Once a grid is in place, it's a good idea to sort all of the project's material spread by spread to see how much is appearing in each. A storyboard of thumbnails for each spread in the project (or each frame of an animation or each Web page) can be very helpful for getting a sense of what content is 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.