Tatlin's Method of Sculpture Abstraction as a Model for Teaching Architectural Design

PHILLIP *G*. MEAD
Texas Tech University

INTRODUCTION

Between 1910 and 1915, Russian Constructivist Vladmir Tatlin produced a series of paintings and sculptures based on the compositional order of 16th Century Russian Madonna's.[1] The paintings' underlying compositions acted as a starting point for studied variations to occur.

A similar process of abstraction was used in second and fourth year design. The method helped sophomores to understand and apply the fundamental principles of axis, symmetry, hierarchy, datum, collision, repetition, and rhythm as outlined in Francis Ching's Form, Space and Order.[1] Tatlin's method was used in fourth year to help identify and elaborate on existing urban patterns. In both instances, the process helped students to see building and landscape design as an integrated whole.

INITIAL EXERCISES

In beginning design class, sophomores start with a master architect's floor plan and, like Tatlin, abstracts the plan to form a new composition. Using Francis Ching's book, Architecture: Form, Space and Order, or any book on Frank Lloyd Wright or le Corbusier that show clearly composed floor. city or garden plans, students make overlay trace compositions on to these plans. Students are encouraged to draw axis lines where they are implied in plan, substitute circles, squares or octagons for other regular geometry's and to elaborate and "play off' the masters use of basic design principles. Two or three studies may be made of a plan before moving on to another. (Fig. 3) Plans are used as opposed to elevations in order to break students away from thinking of architecture in terms of elevation. After an hour, students are then shown slides of plans and graphic compositions that clearly demonstrate fundamental design principles. (mostly by Wright and Corbusier). This demonstrates that plans can be sophisticated compositions in their own right. It also shows the relationship of graphic design to planning in general.

After this brief lesson, students then pin up their work and everyone is encouraged to critique their own as well as others projects. Mistakes are not treated as opportunities to punish and humiliate, but as teaching aids, to point out alternate directions for further creative exploration, or as aids for what to avoid.

After the slide show and critique, students then trade their rough abstract compositions with other students. The overlay abstraction process begins again using their classmate's work as a base composition. By the end of class, students have four to six rough studies from which to base a final black and white composition.

After students present final black and white abstractions, a massing and hierarchy exercise is given. Using Mies van der Rohes Country House plan, students position chipboard rectangles within the plan's confines. The Country House Plan is used for two reasons. First, it is an example of how a plan can be seen as an abstract graphic compositions and second, because it is an outstanding example of how landscape and building design can merge to form an integral composition. Slides are shown of natural scenes, buildings and skylines, which demonstrate a clear use of hierarchy. Students then have two hours to produce a sculptural piece using only vertical chipboard pieces applied to Mie's plan. A critique is given at the end of the class and then an assignment is given to finish the project by inserting horizontal rectangle pieces. By the beginning of the next class, the projects look something between a building and pavilion.

After this exercise, students are given a chance to work in perspective and elevation design. A weeklong exercise is given

Fig. I.

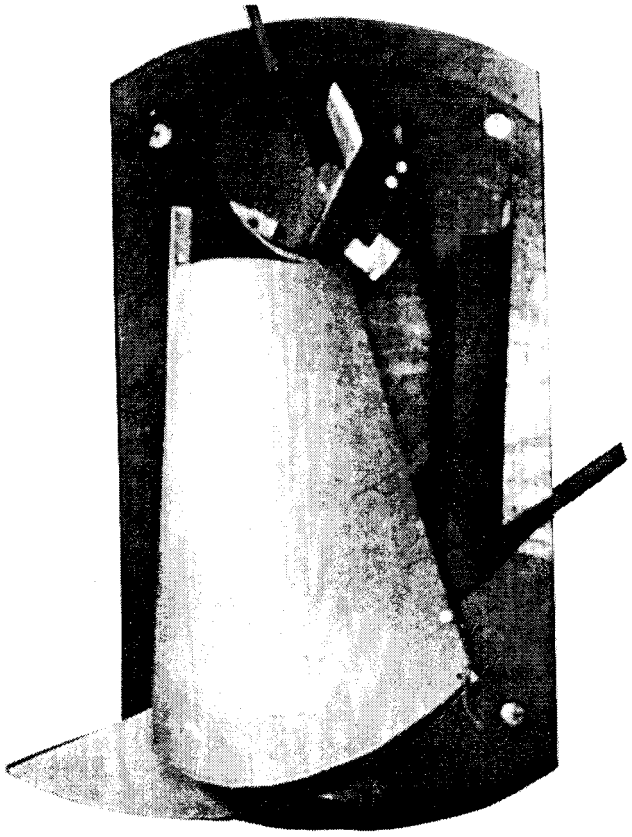


Fig. 2

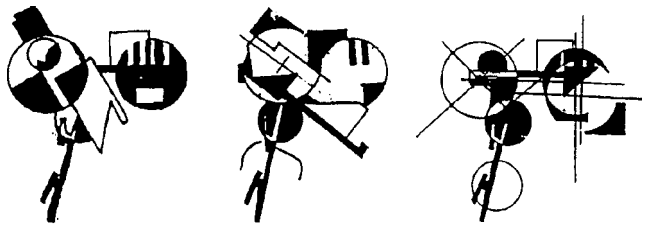
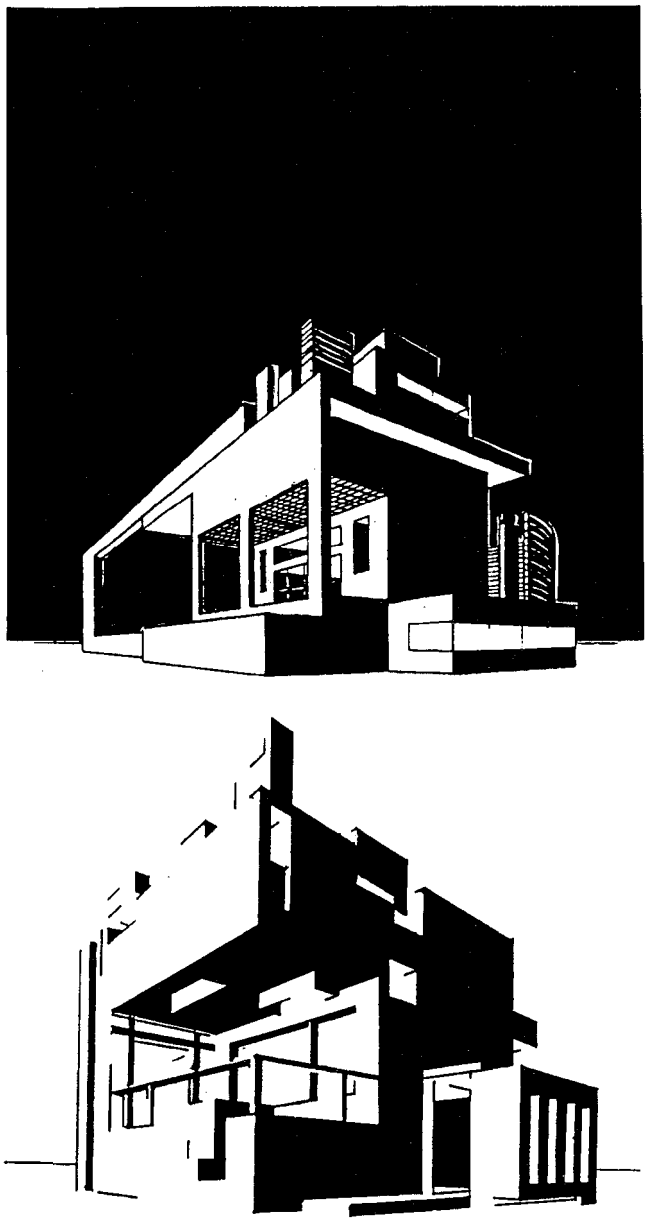


Fig. 3.



Figs. 4 and 5

where students manipulate in perspective, positive and negative space from a cube. Fundamental skills of drawing are stressed along with the principles of positive and negative space manipulation. (Figs. 4 and 5) The next week is devoted to a model based exercise in layering and depth perception manipulation.

LOGISTICS

Within all these projects, class critiques are frequent with some periods having three pin-ups. Initial drawings are kept small and on trace paper which makes the process less intimidating. Presentations on heavy opaque paper like crescent board or strathmore paper is avoided. This forces the student to treat linework as too precious and it makes them laboriously re-copy all study drawings. If design firms do not have the time and money to do this, why should we expect students? Instead, vellum or Mylar speeds the final transfer of drawings. Paper larger than 11 in. x 17 in, is avoided because it cannot be easily reproduced; blueprint machines. large copiers and Photostat machines are expensive and inaccessible to sophomore students who rely a great deal on public transportation. Standard sized paper allows students to copy and hand out their designs for a jury to mark-up with drawings and comments. This idea was accommodated from Charles Moore's firm in Austin, which used to hand out 8-1/2 in. x 11 in. copies of alternative designs for clients to mark-up. All these techniques allow for more meaningful feedback and time to work on design, not logistics.

PAVILION DESIGN

After completing the above exercises, students are ready to move on to the design of a pavilion. Using the previous abstract graphic as a base plan, students design a pavilion that celebrates the basic elements of iight, space and formal order. Students are now encouraged to look at the graphic as a total design from site elements to building. It is pointed out that some black areas may be seen as landscape features like grass, or pools, while others can be seen as building parts. It is at this point where students can see how landscape and building can start to blur. This blurring of building and

landscape is what the author calls "Fuzzy Architecture" after Lotfi Zedeh's discovery of the new computer language of "Fuzzy Logic." Fuzzy Logic is not based on the present black and white binary computer code of "on and off' but is based on thecomplexities of the way humans think. It is logic based on possibilities and potentials, which delves more in the gray areas between black and white or yes and no logic. Similarly, "fuzzy architecture" resides in the areas that are not all building nor landscape. It is these in-between areas that are explored. Buildings by Wright (Prairie Style Houses), Schindler, (Kings Road House) Neutra (Kauffman House) and the general works of Legoretta are shown as examples.

The pavilion project starts with several quick chipboard massing studies which are made from photocopies of the their graphic, which now acts as a parti. Class critiques occur several times during this session. Projects are also traded to other students to broaden perspective. The final presentation then consists of basswood models and drawings of black and white perspectives, black prismacolor light gradient sections, and freehand pen technique elevations. (Fig. 6)

The next assignment increases the scale of a part of the pavilion and encloses it for habitation. The final assignment is a more complex version of the earlier abstraction process. Students are assigned to pick two architects or building designs that are radically separated by either style or time. Students then take a part of a master's design — a section, floor plan or detail — and abstract and transform it. Students then merge the two abstractions to form a new composition. From here, they design a pavilion that can accommodate or inspire four moods. It is at this stage that students are encouraged to discover from the existing parti shapes (not invent from a vacuum) what moods can be inspired or accommodated. Two chipboard study models are made in conjunction with section studies before final elevations are figured out. (Fig. 7) The final assignment consists of drawing an axonometric of a construction detail which demonstrates how part of the pavilion is assembled. (Fig. 8)

UPPERLEVELRESULTS

Tatlin's process has had mixed results in more advanced classes. For second semester sophomores, the realities of program requirements, site and life safety issues can overwhelm students into designing functional decorated sheds with little connection to the landscape. Due to Tech's policy of not taking the same design Prof. twice in the same semester, second semester sophomores were given condensed versions of Tatlin style abstraction exercises. These students were then tasked with designing a house on a 30-degree hill for the wheelchair bound Stephen Hawkings. Tatlin's abstraction process was applied only after the students had worked out all the functional aspects of the design. Then they shrunk their initial floor plans on the copy machine and drew overlay abstraction plan studies. Space and light pavilion models were then generated which further informed the house design. Granted, the abstractions are not based on a master's plan, but most students created a moreformalizedfloor plan from their brief tangential study.

Tatlin's abstraction process was also tried on a fourth year small urban study and design of a deteriorating three block long commercial strip in Lubbock. Key destination points of interest, stopping points and pedestrian routes were analyzed and then abstracted into a graphic design. This process emphasized, elaborated and gave geometric and material clarity to what was already there. The existing urban pattern was celebrated, not reinvented.

CONCLUSION

In conclusion, since the application of Tatlin's abstraction process has only been used for three separate classes, the process needs further exploration. There are still pitfalls to the process. Students can easily becomeenamored with the formalism of the process while losing sight of program and life safety issues. The finer points of interacting with the site can become lost from blindly following

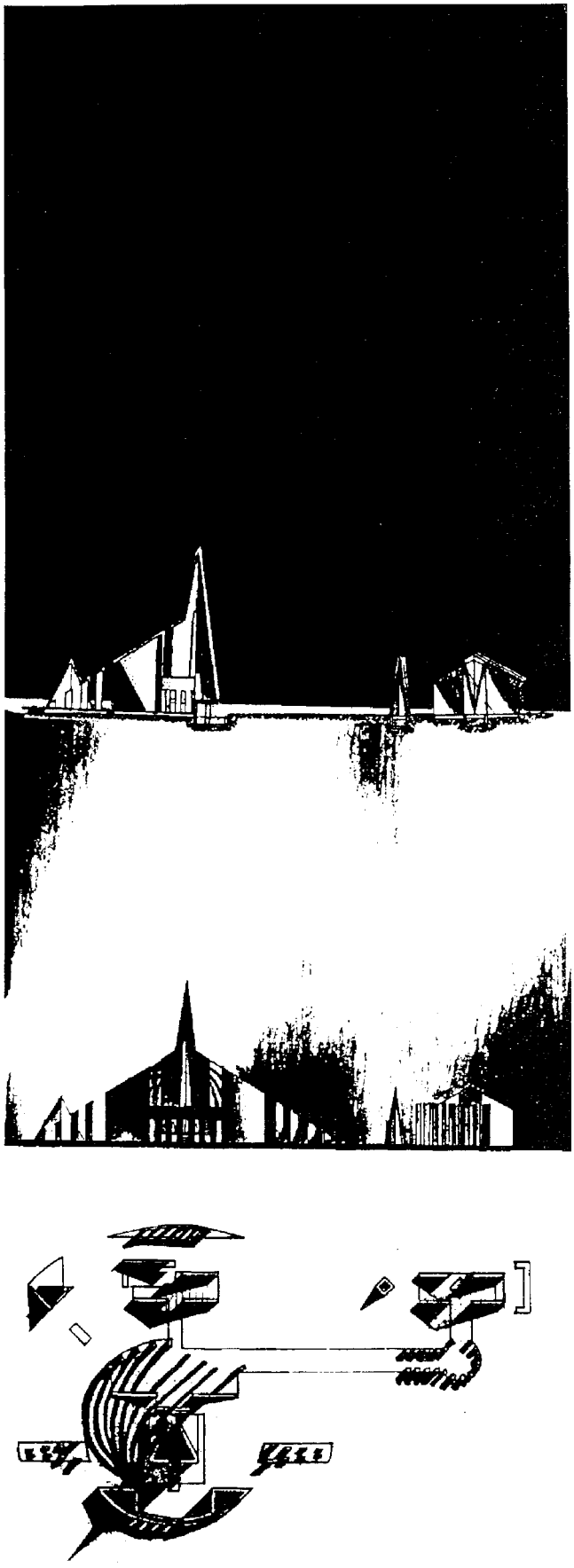


Fig. 6

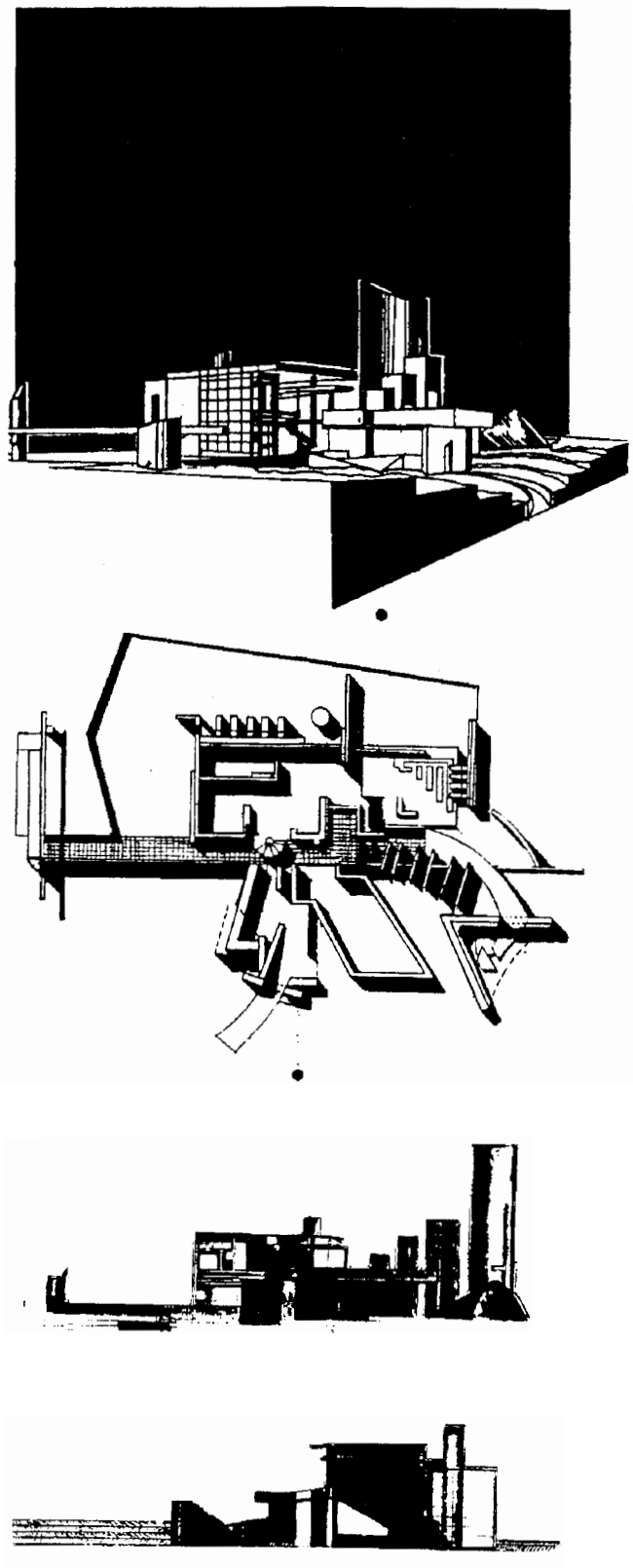


Fig. 7

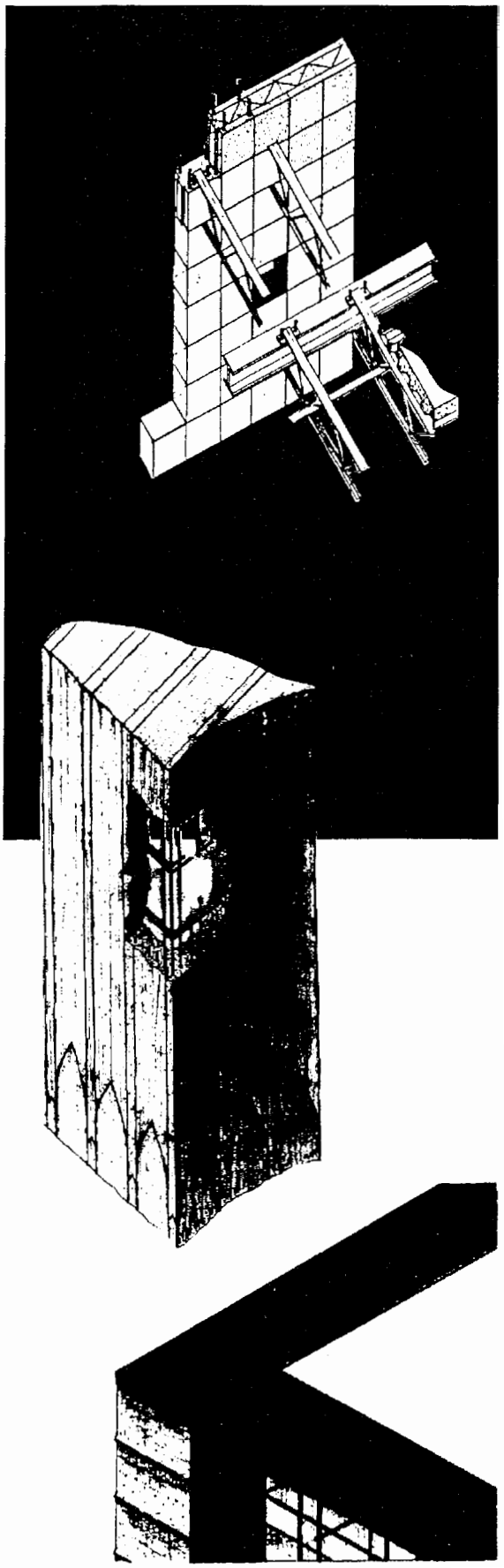


Fig. 8.

geometry. This is where thinking of the plan as a flexible collage that can accommodate changes and new insights, becomes important.

The most pleasant discovery of the process however is that students can more easily see how site and building design can become integrated. This breaks the natural tendency for students to separate the design of building from the landscape. Hopefully, this will open a more meaningful dialog with our sister profession, landscape architecture

NOTES

[1] John Milner, Vladirnir *Tatlin* and *the* Russian *Avant-Garde* (New Haven: Yale University Press, 1983).

[2] Frank Ching, Architecture, *Form,* Space *and* Order (New York: Van Nostrand Reinhold, 1979).

[3] Dneill McNeill, *Fuzzy* Logic (New York: Simon and Schuster, 1993).