

WEILING HE  
Texas A&M University

## A Passage

### Between Design Thinking and Visual Communication Skills

At the College of Architecture at Texas A&M University, a one-year career-change program is set up for students who intend to pursue a graduate degree in architecture without a bachelor's in architecture. The non-conventional backgrounds of these "career change" students demand a special pedagogy. On one hand, being almost the same as freshman students, "career change" students lack visual communication skills in freehand drawing and physical modeling, as well as digital drawing and modeling. On the other hand, their maturity in understanding subjects makes freshman-level studio projects not challenging enough. Therefore, the choreography of "career change" courses has to accommodate both a gradual development in visual communication skills and an intensive exercise in design thinking.

Seeking architectural ideas from other media, such as painting, film and music, would help students understand architectural space in a critical manner. Being removed from the conventional functionality of buildings, students are invited to explore a broader range of architectural concepts. Although

similar design studios have been widely taught in this country, what the author intends to push forward is a greater stress on the use of various visual skills, such as drawing and modeling, as the media in which design ideas are formulated. The objective is to develop a set of "design tools" rather than merely developing visual techniques.

In the fall semester of 2005, a visual communication course was taught in the context of a "translation" project—a passage. In this course, students were asked to design a passage based on their readings of the progression of a piece of artwork. Throughout the design process, the author introduces specific drawing and modeling techniques. In this way, the links across the boundary between a piece of artwork and a physical space are built as dynamic operations in specific drawing and modeling media.

#### The Departure Point

The movie *Sliding Doors* is one of the options given to begin the project. Three students chose this movie for their designs,

which we will discuss in detail in this paper. This movie features two interweaving narratives in time. A girl's life splits at the moment of catching or missing a London underground train. In the scenario of catching the train, the girl, Helen (A), finds her boyfriend cheating, so she breaks up with him and goes on to build a new life. In the scenario of missing the train, Helen (B) is still fooled by her boyfriend and remains within the doubtful relationship. At the end of the movie, both lives converge at a hospital after both Helens have had an accident. Helen (A) dies while Helen (B) breaks her relationship with the cheating boyfriend and moves on.

**Diagram**

How can one formulate a design idea from the narrative of a movie<sup>1</sup> and assign a spatial form to the design idea? It is a big leap indeed. The challenge is that one has to move from the non-visual narrative to the visual space. The tool that we use to make this move is diagrams.

A diagram refers to "any 2-D or 3-D shape that is used to express a thought as a spatial construction."<sup>2</sup> Using diagrams to facilitate the "translation" from other forms of art to architecture has been discussed intensively by John Peponis, Kenneth Knoespel and Aarati Kanekar (2002). In their experiments, students become creative in choosing their own media for the diagrams. However, for the "career change" students, their creativity may be limited by their lack of visual communication skills. Therefore, specific visual techniques need to be introduced to help them realize the diagrams. More important, exploring the potentials of specific visual media in the process of "translation" becomes a bigger question, which may be applied to studio pedagogy of other student groups.

In our studio, we use two kinds of drawings as diagramming tools. One is gesture sketch. The other is timeline. They notate different perceptions of the movie. Gesture sketch, which remains as a dense system,<sup>3</sup> records the imagery aspect of the movie while timeline, which can be a discrete system, records the linear progression of the movie.

Gesture sketch is introduced to grasp the impression of a scene or the tendency of a movement. Gesture sketch enables the students to draw in a loose manner while being conscious of the structural characteristics of objects. When using this technique to diagram the movie, students appear to be aware of the meanings of the shapes they draw. They either articulate the shapes as a logical structure of the narrative or use the strokes of the shapes to express certain feelings that arise from the movie (figure 1).

Timeline notates the relationship between time and events. Students find this technique to be analytical enough to handle. To draw a timeline, one marks "when" and "what" hap-

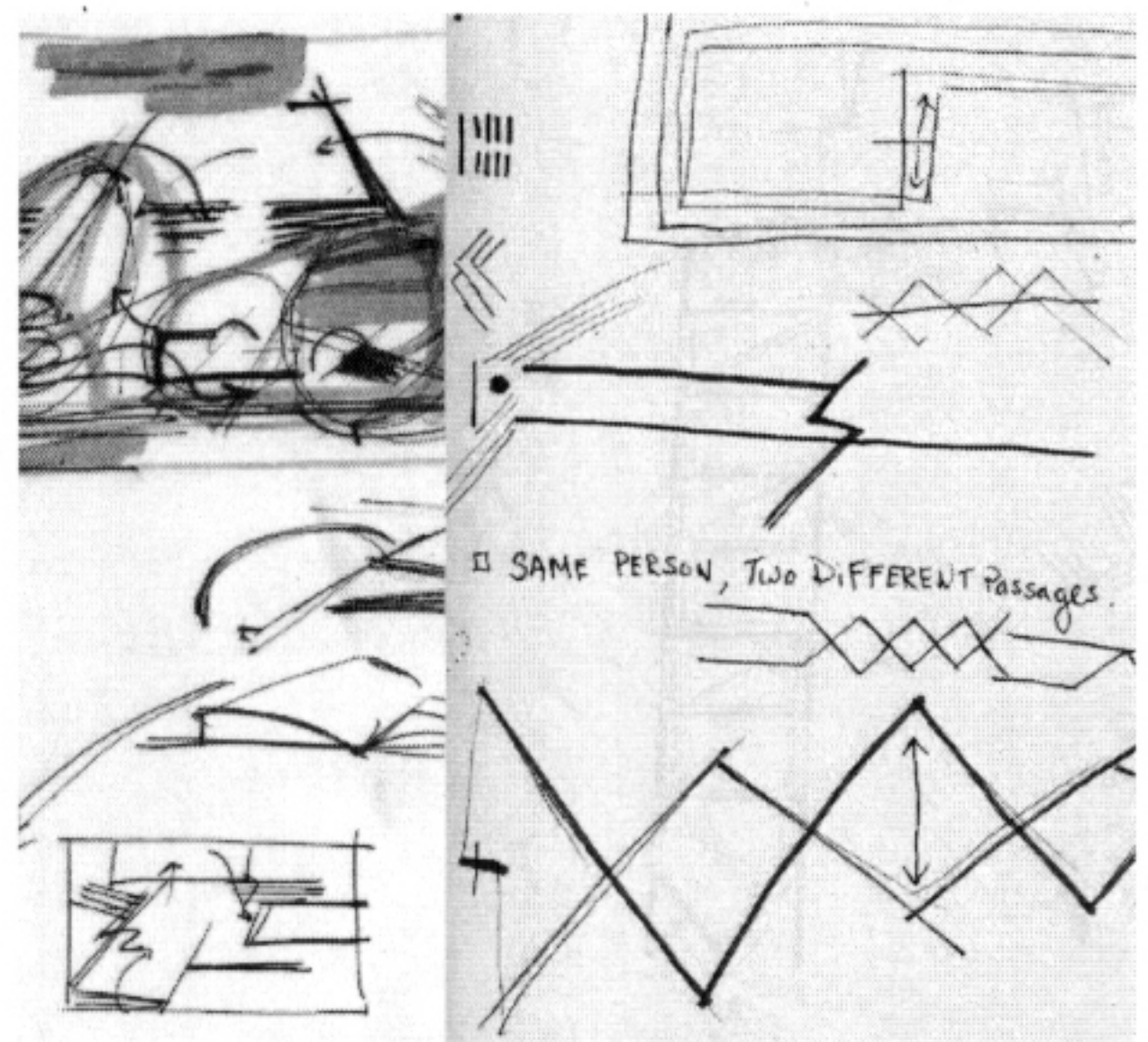


fig. 1 Gesture sketches and timelines by YuJung Jang, Amanda G. Scott and Bruce R. Baxter.

pens. However, in diagramming *Sliding Doors*, the challenge resides in what moments or events are considered significant to be marked within the continuum of the narrative.

Interestingly, because of the parallel structure of the movie, all students use parallel timelines to highlight the narratives of Helen (A) and Helen (B). What is even more interesting is that the students tend to mark commonalities or oppositions between these two parallel timelines so that the two timelines become a matching pair. Three key elements are used to pick up the marks. They are 1) event, which is what happens to one Helen when the other's life changes; 2) location, which is when the two Helens are in the same place in the movie, as well as 3) relationship, which falls more or less in the same category of event.

Although the timelines are similar, different students stress different aspects of the timelines. Some students pay attention to the overlapping of place and time so that they give more importance to the events that happen in the same place and at the same time, while other students observe Helen's life as a simple metaphor of life going up or going down. As we will see later, these differences in diagrams lead to specific

architectural articulations.

Further, which is in fact the purpose of this stage, the students tend to cross-use gesture sketches and timelines so that a mapping between these two is always carried out. In this way, the diagramming phase becomes the initial process of design formulation.

### The Passage

After diagramming the narrative of the movie, the students are put in intense three-dimensional experiments. The objective is to explore architectural articulations of the diagrams. A passage is a space that facilitates a linear path. On one hand, as the viewer moves through the passage he/she is bound to encounter various spatial conditions. These are the experiential aspect of space. On the other hand, after moving through the passage, one may retrospectively recognize the space as a structure that he/she can never literally see at any angle or any moment when moving through the space. The diachronic experience in time is laid out synchronically. The overall structure of the space exemplifies the conceptual aspect of space. Therefore, in the design of a passage, students will have to deal with both the conceptual aspect and the experiential aspect of space. In other words, they not only link the structure of the space to the structure of the narrative but also develop certain spatial conditions along the passage. Spatial sensibilities are developed through thinking across the conceptual aspect and the experiential aspect of space.

This design stage is facilitated by three kinds of visual communication techniques: conceptual modeling, AutoCAD drawing, and 3D VIZ animation. Students are constantly asked to use these techniques to clarify design intentions rather than using them as passive representations of the design product. In other words, architectural drawings and models are used to reveal the modes in which the space is thought about.

Conceptual modeling allows the students to develop 3D ideas quickly. It addresses the basic spatial structures as well as the initial concerns of materials. For example, one student intends to design a passage in earth which merges in the natural landscape. He explores this idea in layers of chipboard. The way he lays the model together enables him to play with the idea of carving versus piling materials, which gives the final form of his design (figure 2).

Projection principles in drawing, such as plan, section and elevation, are introduced with AutoCAD. The precision of AutoCAD drawing forces students to develop their designs in accurate dimensions. Further, AutoCAD 3D modeling is introduced in order to emphasize that the plans, sections and elevations are only slices of space.

At the end, 3D VIZ is introduced as a modeling and animation tool. The students use animations to examine and

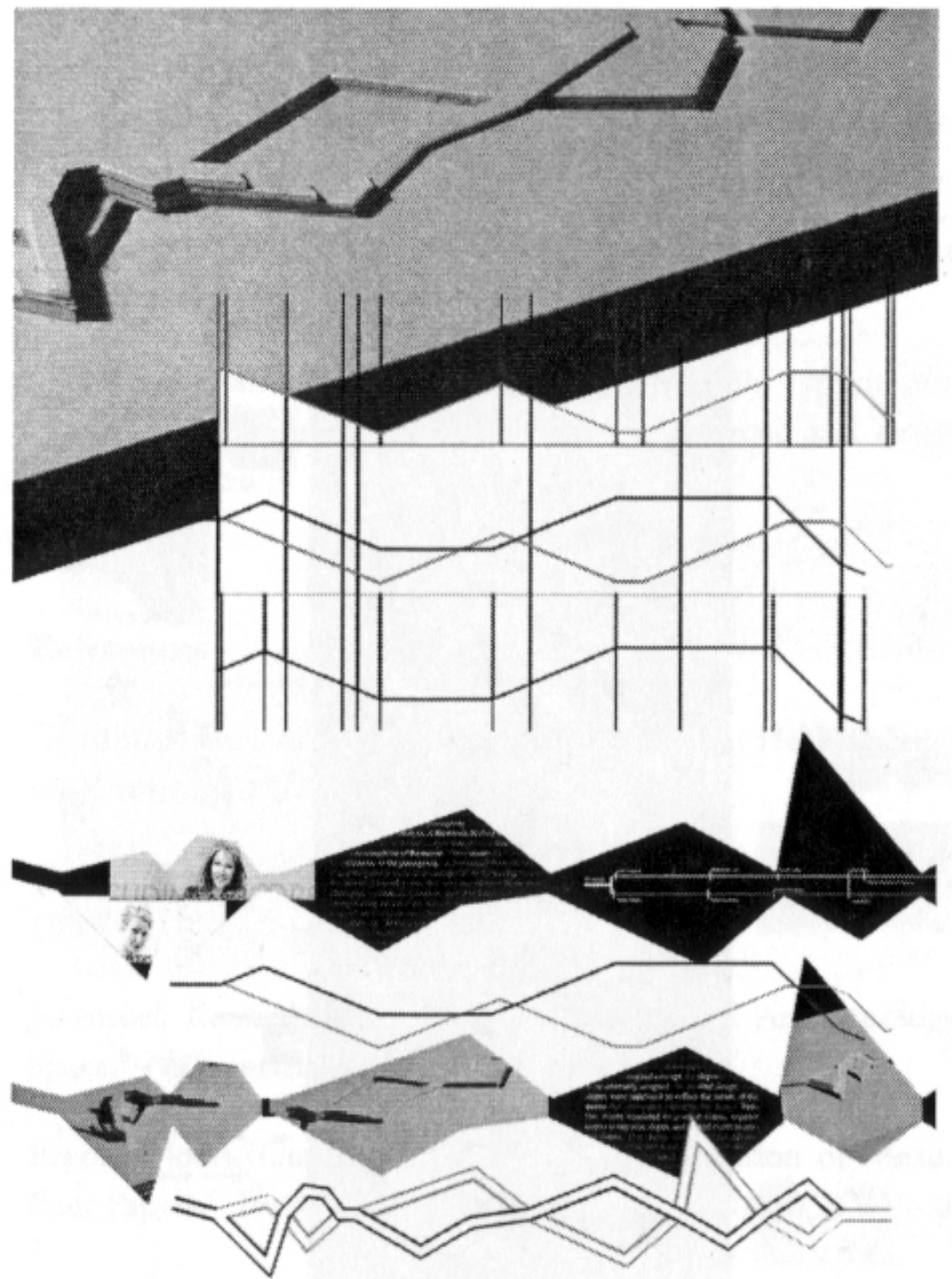


fig. 2 "Passage" by Bruce R. Baxter.

articulate their designs in virtual space. They often go back to modify their original designs in AutoCAD or even in conceptual models. In addition, the students are challenged with the question of materials. Although materials in rendering are only an idea of surface, the awareness of materials developed in rendering leads the students back to the AutoCAD drawings to design the joint details.

In the previous phase, the interweaving structure of the narrative of the movie features the students' diagrams. As expected, the parallel timeline turns out to be two intertwining paths in their designs. The designs become variations of the same structure, of which there are two categories: one is to arrange two paths that go up and down in elevation, and the other is to arrange two paths that zigzag in plan.

The structures of the three students' designs share two outstanding commonalities. First, intersection becomes a key feature of the designs. It registers the moments when the two Helens appear in the same place in the same time. The interrogation of materials adds a dimension to the articulation of intersection. One student separates the two paths by a concrete wall while leaving the intersections with glass openings. In this way, the viewer in one path may see the other path at the intersection but can never cross, which conforms to the

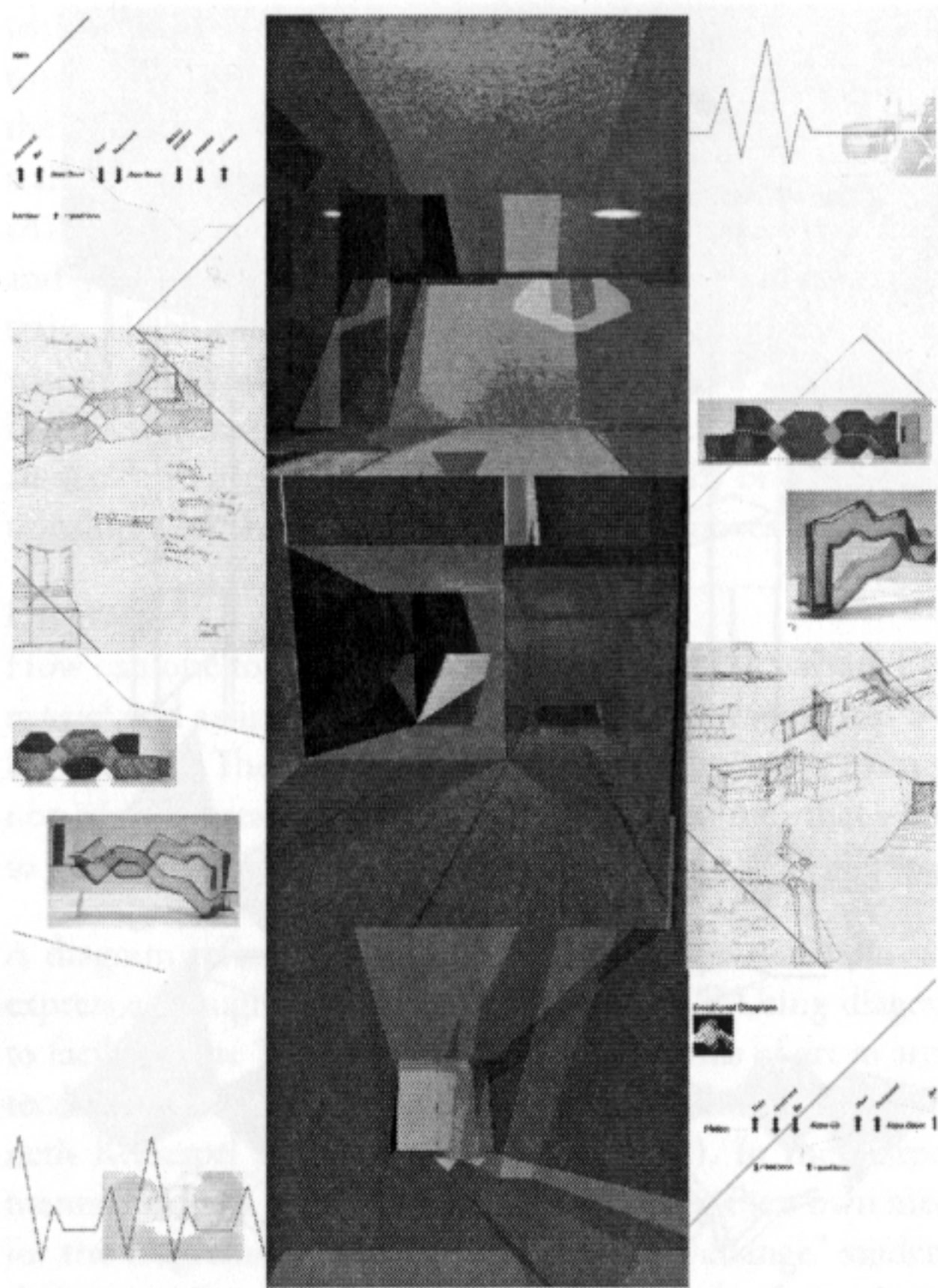


fig. 3 "Passage" by Amanda G. Scott.

narrative of the movie (figure 3). Even when the two Helens are in the same place at the same time their lives are still kept parallel yet separate. Slope is another key feature. Students coincidentally share the same metaphor that "going up" indicates a positive life while "going down" indicates a negative life. In the movie, Helen's life keeps swinging from moving in a positive direction to moving in a negative direction, which becomes the changing slopes in the students' designs.

There is always a balance between the elements taken from the movie and the elements that are assigned arbitrarily by the students. The designs become personal in a way. For example, in all three designs, a slope stays constant until another event occurs and changes the slope. However, the degrees of the slopes are the students' decision. In most cases, they pick up regular numbers such as 45 degrees or 22.5 degrees. In the design that elaborates the passage in plan, how far away each zigzagging part goes is also decided by the student (figure 2). The arbitrariness that the program allows the students provides the possibility for them to operate the design as a formal system with regulations. To put it simply, the students are creating a 3D composition with the rules that they take from the movie. Therefore, the "translation" is not a strict one-to-one mapping. The aim is not to find a right "translation" but one

that can be more integrated as a system than others.

### The Book

At the end, the design process concludes in a book produced by each student. The book documents their design process and communicates the design ideas to the audience. Superficially, this phase is an architectural representation exercise. On a deeper level, it is another exercise of "translation," a translation from a passage with specific structure and appearance to a book with specific structure and appearance.

One may look at the whole project as a sequence made of three passages. The movie is a passage of the progression of the narrative. The spatial passage is one that challenges the imagined viewer's body in the same way that the narrative of the movie challenges his/her emotions. The book embeds another passage in the sequence of reading.

Among the three students, one uses the shape of the plan of his passage as the shape of his book. Conformity is carried out literally (figure 2). One student makes a normal-looking book but charges the reading sequence of the book. The pages of her book are arranged in such a way that it allows a forward reading and a backward reading. Each of the two reading sequences presents the design process of one passage from one Helen's life. In this design, the structure of the narrative of the movie, the structure of the passage, and the structure of the book are the same. Conformity is played at a deeper level (figure 3). The other student discards the idea of a normal book. She makes a box with sliding pairs of boards. This design not only coincides with the key moment of a sliding door splitting two lives but also intersects the idea of pairs foregrounded in the diagrams. Conformity is articulated as the mechanism of the model, which is again a spatial operation (figure 4).

### Discussion

In a project that departs from a movie, moves through a space, and ends at a book, there are always negotiations between forms with intrinsic meanings and forms deriving from arbitrary decisions. Decisions made in each design phase heavily depend on what appears to be important to the designer. The "translation" becomes a personal restatement of the original work. Therefore, the purpose of "translation" is beyond an isomorphic exploration.

In several ways, the choreography of this course lies at the intersections among various domains. First, the design program crosses the boundaries between other forms of art and architectural space. Second, the course crosses the boundary between visual communication skills and design thinking. Third, the project discussed is set as a pedagogical experiment that crosses the boundary between drawings/models as

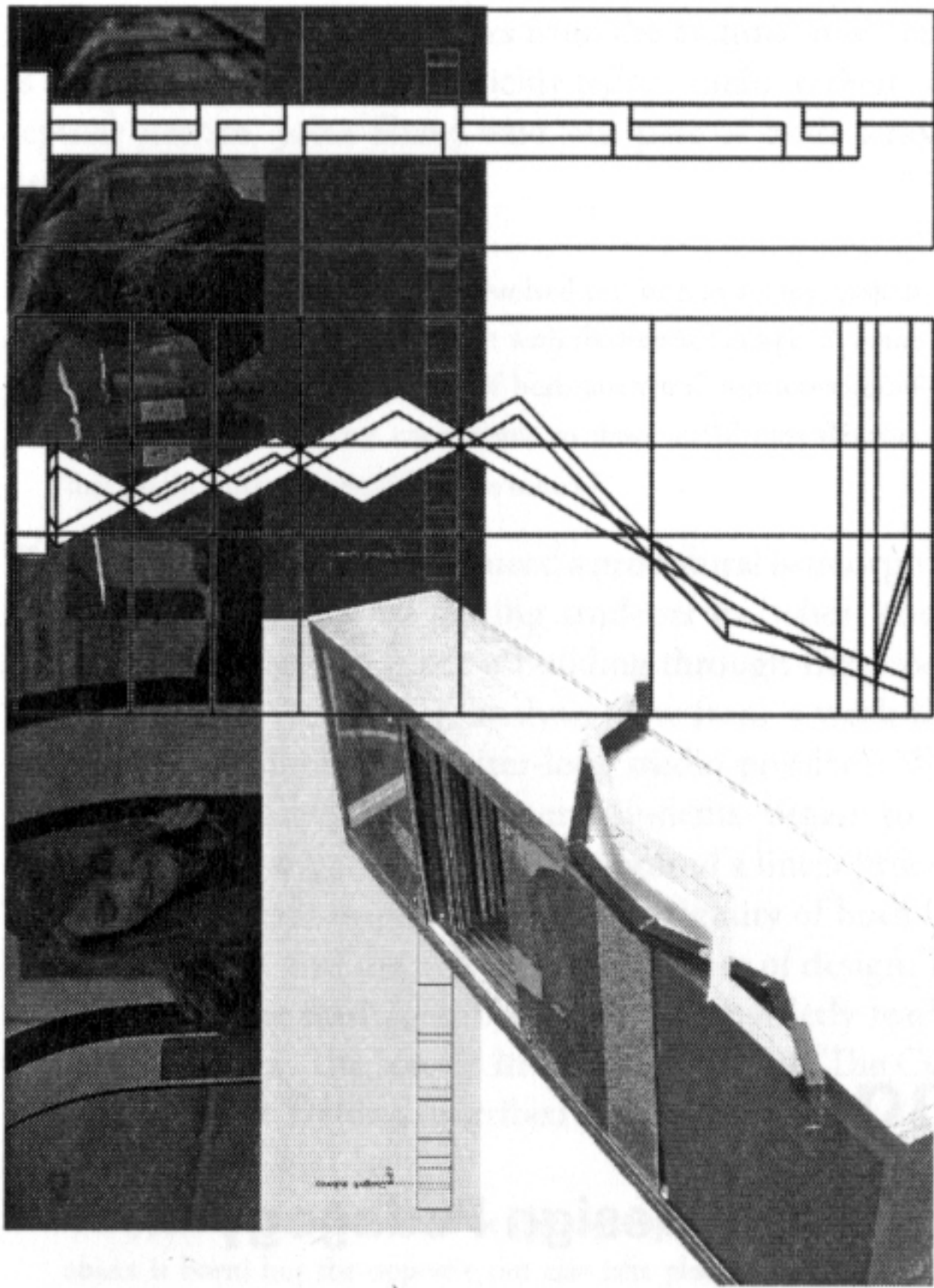


fig. 4 "Passage" by Amanda L. Fry.

design operations and drawings/models as design products. By introducing different drawing and modeling techniques at different design stages, the consciousness of meaning being medium-specific is brought to the fore at a methodological level. In turn, the drawing and modeling techniques can be understood in the design process rather than some subsequent representations.

#### Acknowledgements

The student designs referred to in this paper are by Bruce R. Baxter, Amanda G. Scott, and Amanda L. Fry. Special thanks to Dr. John Peponis for his inspirations on my research in the field of spatial construction of meaning. Special thanks to Taeg Nishimoto for his encouragement and support for my teaching of this class.

#### Notes

- <sup>1</sup> Although a movie embeds strong visual elements, in our studio, students did not focus on them.
- <sup>2</sup> Peponis, J. "Spatial Models, Design Reasons and the Construction of Spatial Meaning" in *Philosophica* 70 (2002): 63.
- <sup>3</sup> Nelson Goodman (1976) differentiates a dense system from a discrete system on the fact if there is syntactic and semantic disjointness in the system.

#### References

- Goodman, Nelson. *Languages of Art*. Indianapolis: Hackett Publishing Company, 1976.
- Howitt, Peter (Director). *Sliding Doors* (DVD). Paramount Studio, 1998.
- Kneospel, Kenneth (Editor). "Diagrams and the Anthropology of Space," *Philosophica* 70, (2002).
- Peponis, John (Guest Editor), "Spatial Construction of Meaning: Four Papers," *The Journal of Architecture* 10 (April 2005): 119-200.