ABSTRACT

Improvisation and Articulation: The Jazz Studio

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In this beginning, graduate, design studio, notions of architectural articulation are studiedthrough an interpretive analysis of analogous structures in jazz improvisation (an abstract, informational medium). The essential tectonic elements and principles needed for skillful manipulation of form, space, order and sequential systems in architecture are similar to the disparate links, connections, joints and transitions present in jazz improvisation. No attempt is made to derive overt metaphorical or literal images from the music. Issues of formal consistency, flexible ordering systems, relationships/positioning of elements, and the articulation of spatial sequences supersede strictly pragmatic concerns. The intention of the studio is not to study jazz music, but to awaken the novice architecture student to the possibility that studying analogous concepts from other creative disciplines, such as jazz improvisation, can reveal potent ideas about tectonics.

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INTRODUCTION

An effective beginning design pedagogy in a graduate level architecture program must emphasize the importance of tectonics in architecture. The ability to spontaneously manipulate and articulate form and space in architecture is similar to the treatment of seemingly disparate links, connections, transitions and joints present in jazz improvisation. In this design studio, students study notions of architectural tectonics by looking at analogous structures in jazz improvisation. The students' mission is to translate and apply this sensibility to architecture.

Many of the tectonic elements and principles that govern jazz improvisation have analogous concepts in architecture. The parallel between these two disciplines is the guiding theme for the design methods presented. Students are encouraged to maintain a parallel interval by resisting to make architecture literally symbolic of jazz music. No attempt is made to derive overt metaphorical or literal images from the music.[1]

The intention of the studio is not to study jazz, but to awaken the student to the possibility that studying analogous concepts from other creative disciplines, such as jazz improvisation, can reveal potent ideas about tectonics in architecture. The studio emphasizes that ideas about jointure of elements and articulation of space can emerge from the act of visually reinterpreting jazz improvisation. Architectonic issues of formal consistency, flexible ordering systems (establishing rules and sub-rules), the relationship of elements, and the articulation of movement systems (controlled sequences through space) supersede strictly pragmatic concerns.

The work proceeds in additive and incremental steps. The studio starts with a listening and observation analysis that examines the structural and thematic aspects of a singular jazz composition. Students are given a restricted vocabulary of basic architectonic elements. Structural ideas referring back to the original jazz piece are transposed from the vocabulary into a series of interpretive two-dimensional exercises that define underlying organizational strategies and conditions of spatial jointure. The resulting drawing and collage improvisations are projected into three-dimensional structures configured within a self-referential context. The formal vocabulary and relationships discovered are then applied in the design of a *Jazz Studio.*

LISTENING AND OBSERVATION

The term vehicle was first proposed in jazz by trumpeter Dizzy Gillespie as a metaphor for tune. This describes the improviser's use of the tune as a machine that he rides during his improvisation.[2] The jazz vehicle chosen for observation and analysis is *Lester Leaps In* recorded by *Count Basie and the Kansas City Seven*, in 1939.[3] Tenor saxophonist Lester Young is the featured soloist.

In jazz, musicians record an improvised performance based on the same arrangement several times. They must critically decide which "take" is the one that will appear on the final released album. The "alternate takes" are analogous to sketches in design. *Lester Leaps In* was recorded in two improvised live takes. The recordings are quite different in character, especially in the solos, even though the underlying structure remains constant. In the released "take," Lester Young's solo represents a spontaneity that is ordered and structural. There is a quality of balance, a unity of parts and a clarity of concept lying beneath the surface of an invigorated texture of notes.[4] By comparison the "alternate take" seems unbalanced, disjointed and somewhat sluggish.

The other musicians' solo and collective improvisations respond to Lester's brilliant efforts. This was one of those sessions where nothing other than the arrangement had been planned prior to coming into the studio. The musicians played what is now regarded as a masterpiece.[5] By listening to both versions, the students witness the differences in spontaneously recorded, abstract, musical composition.

Lester Leaps In is an *AABA* structure that refers to the four melodic sections within each chorus. The *A - melody* is repeated twice, followed by a bridge *B - melody*, with a return to the *A -melody*. Each section is eight measures (bars) in length. A measure consists of four beats, therefore a single section has thirty-two beats (measurable increments). The entire composition consists of an introduction and six choruses. The first half of the *A-melody* is the vehicle or singular generative idea/theme for the entire piece. The four-bar introduction and first chorus support the vehicle, setting up enhanced themes and formal structures. The vehicle acts as a datum from which comparisons are drawn. Improvisational solos build upon these structures as variations throughout the subsequent choruses.

The studio is divided into six analytical groups according to pairings of choruses in the piece (1 & 2, 2 & 3, 3 & 4, 4 & 5, 5 & 6, 6 & 1). An arrangement chart of the song, indicating sections and the number of measures for instrumentation breakdowns is given to the students (fig. 1). The first step in the process is to repeatedly listen to the music. Each group is required to become familiar with the entire composition. They subsequently distill key musical structures and elements within their chorus pairings. A strict technical analysis of the music is unnecessary because they are looking at the exercise as architects, not musicologists. By repeated listening and observing, the students begin to discover and recognize subtle relationships and references.[6]

TWO-DIMENSIONAL IMPROVISATIONS

A series of two-dimensional exercises examine the structural and thematic aspects of the musical analysis. The ordering concepts of constants and variables regulate intuitive moves. Ideas pertaining to jazz improvisation evident in the musical structure are transposed into tectonic principles such as: jointure, rhythm, interplay, counterpoint, progression, tension-release, hierarchy; positive and negative space; overlapping and interpenetrating precincts; ascending and descending movement; contraction and dilation of scale.

The process of improvisation begins with the construction of an underlying reference system, that is derived from the measure and beat system of the chorus pairings (fig. 2). Working from their grids, students are asked to translate the basic relationships and events of the musical structure. In effect, they make an abstract representation of the musical analysis.[7]

Students are given a vocabulary of base forms, that is limited to orthogonally positioned squares, rectangles, L-shapes, and U-shapes (fig. 3). The vocabulary is not entirely rigid or inflexible. Students can interpret this vocabulary in many directions and possibilities through size, shape, location, orientation and number. For instance, U-shapes can be manipulated with respect to relative lengths and thicknesses of the base and legs to form distorted U-shapes, or transform the U-shapes into J-shapes or other hybrid forms. Students make their initial compositions with precisely cut pieces of black paper. These figures are positioned and pasted onto a white ground that is marked with the reference system. The collage technique encourages improvisation.

The first "take" is a rather intuitive response that is usually quite chaotic and disordered. Most often there are too many elements competing with each other. The students are asked to create several "alternate takes" of the composition. Through a process of pin-up critiques, numerous tectonic issues are raised and comparisons are made across the student projects. Eventually, the base forms are positioned in an increasingly inventive manner, subtly re-defining precincts within the underlying *AABA* field (fig.4).

The refined collage study is re-interpreted into a single line-weight drawing as a technique for students to carefully measure, adjust and reconstruct their work. The next drawing demands a method of multiple line weights, that introduces an implied spatiality to the positioned elements. This drawing can then be read in terms other than of a literal flatness. This phenomenon becomes more provocative when each edge of the positioned elements generates a regulating line. The introduction of a complex network of regulating grid lines become guides for discovering cross-precinct relationships. A consistent language of spatial jointure, articulation, and the conceptual detailing of individual base forms become the focus of the study (fig. 4). The drawings begin to imply reciprocating planimetric or sectional ideas. By this stage in the game, the original musical referent has become a point of departure into the tectonic. As discussions revolve around the integrity of the visual compositions themselves, the students begin to think about architecture instead of music.

The next study is analogous to creating a "new" vehicle. Students are asked to cut an imaginary spatial section through the completed two-dimensional improvisation. This is a difficult task for many students because it requires the mind to fabricate a third dimension that is interpolated from a two-dimensional source. Grid lines in the x-dimension are extrapolated into a different orthogonal plane (z-dimension). A new set of grid lines must be invented for the y-dimension. It is suggested to the studio that this new set of grid lines be derived in various ways from measurements and sequences within the previous drawing. In a subtle way, the B-section of the previous section should remain apparent in the new iterations. Again, several "takes" are needed to refine this new improvisation, culminating in a collage using three shades of gray plus black and white. A distinction is established between the fields (as shades of gray) and the figures (as white or black). The gray-scale study implies a set of ambiguous depth interpretations within the structure. This composition becomes the gateway to the three-dimensional sequence of study (fig. 5).

FIVE PANEL SEQUENCE

The two-dimensional improvisations lead to a quasi-spatial interpretation. In order to entice students into thinking in three dimensions, they are presented with

a model format consisting of several transparent planes and a base articulated with four bays. Five of the planes are frontally distributed and one lateral plane acts as a longitudinal reference (fig 7). The model is flexible so that students can experiment with the spatial positioning of figures and fields.

The first step in the five panel sequence is to look back at the work compiled over the previous two-dimensional sequence and to cull a significant strip from the body of work. Further variations and themes are developed from this choice to make up the five-panel sequence. This technique becomes the basis of testing "takes" as the vertical sequences in the longitudinal panel. Once a "masterful take" is decided on (fig. 6), a series of regulating grid lines is incised onto the surface and implicitly into the space of the model. Finally, a set of coordinated surfaces are decomposed and rearranged as a set of five panels through the technique of applying self-adhesive transparencies of the new configuration.

The two-dimensional studies are developed into a three-dimensional, conceptual model. The organizational structure, or big idea, is recognized and emphasized. The set location of the five transparent planes becomes the primary spatial ordering device and sequential generator. The spatial definition of secondary and tertiary precincts is discovered from further analysis and re-interpretations of the earlier two-dimensional work.

THE JAZZ STUDIO

The strategies, methods and syntax developed in the previous analytical phases condition the synthetic design for the Jazz Studio Project. The final "take" of the project involves the development of five-panel model. Correspondences between plan and section and the relationship between structure and landscape is developed through the filter of the established syntax. Several preliminary study models and axonometric diagrams are fabricated. The work created in the five-panel sequence (fig. 6) is applied to the transparent planes of the model and projected into three dimensions as a series of spatial inserts between the planes. These inserts are re-configured and recorded as a set of axonometric drawings of the sequence (fig. 7).

The tectonic lessons learned over the course of study are articulated into meaningful spatial sequences. Distinctions between exterior and interior space are clarified. Syntactical consistency in tectonic articulation begins with the relationship between solid and void, and further manifests itself through the three-dimensional vocabulary of elements such as volumes, planes, columns and beams (fig. 8).

CONCLUSION

The students are urged to make thoughtful insights into the problem at hand through careful analysis and observation. It becomes apparent that participation in this kind of an exercise requires a continuity between the steps of the process and the final product. Weak choices are identified because of the additive and incremental nature of the project. Once students immerse themselves in the problem, they eagerly look at architecture in an in-depth and non-conventional light.

The jazz studio promotes methods of improvisation as a discourse, where execution precedes conception[8]. The attitude presented is that potent formal meaning can emerge from the act of abstracting, manipulating and transforming external references, whether it comes from jazz music or one's own prior work. Students begin to understand the differences between the abstract and the literal in architectural design.

The jazz "vehicle" is used in the studio as an analogous point of departure for the generation of architectural form that is inherently structured and ordered. The key lesson of this studio is about creating an architectural idea and working it through as an improvisational sequence. In other words, devising an idea, revising the idea, adjusting it, evolving it, and transforming it into a tectonic manifestation of space.

NOTES

1 Yolanda Cole, "Frozen Music: The Origin and Development of the Synthetic Concept in Art," *Precis 6* (New York: Rizzoli, 1987), pp. 170-181.
2 Jerry Coker, *Listening to Jazz* (Englewood Cliffs, NJ: Prentice-Hall, 1978), p.9.
3 Recorded for Vocation, CBS Records from Epic LN 3107, New York, NY, November 5, 1939. Musicians: Count Basie (piano), Buck Clayton (trumpet), Dickie Wells (trombone), Lester Young (tenor sax), Freddy Green (guitar), Walter Page (bass), Jo Jones (drums).
4 Martin T. Williams, ed., "Bebop," *The Art of Jazz : Essays on the Nature and Development of Jazz* (New York: Da Capo Press, 1979).
5 Oscar Treadwell, from his radio program, *The Eclectic Stop-Sign*, WGUC-FM, Cincinnati.
6 Coker, pp. 95-103.
7 John De Cesare, "The Theory of Visual Space in Music," *Precis 6*. (New York: Rizzoli, 1987), pp. 183-187. In this example, the author translated musical scores to graphic representations.
8 Bahram Shirdel, Explorations. (New York: Columbia University, 1983), p.5.

FIGURE CAPTIONS

Fig. 1. Jazz arrangement chart for *Lester Leaps In* by *Count Basie's Kansas City Seven*, Lester Young lead soloist (tenor sax); Vehicle Type: a Standard (an original melody which borrows its chord progress from "I Got Rhythm"; Formal Structure: *AABA* (each section is 8 measures or bars long); Length of Selection: 4 + 192 measures.
Fig. 2. Underlying reference measurement system and format/grid for two-dimensional improvisations (16 inches square); the beat becomes the minimal unit for measuring the grid (1/8"); 4 beats per measure, 8 measures per section (32 beats), 4 sections per chorus , 32 measures per chorus, 128 beats per chorus.
Fig. 3. Base forms
Fig. 4. Two-dimensional improvisations: initial intuitive "take," alternate "take" and grid extrapolation.
Fig. 5. Sectional improvisations: grid extrapolation and gray-scale spatial study.
Fig. 6. Five panel sequence collages.
Fig. 7. Exploded axonometric representation of conceptual model format: four-bay base, five transverse planes, one longitudinal plane, four volumetric inserts.
Fig. 8. Final conceptual/material model of the *Jazz Studio*.

figure: 1

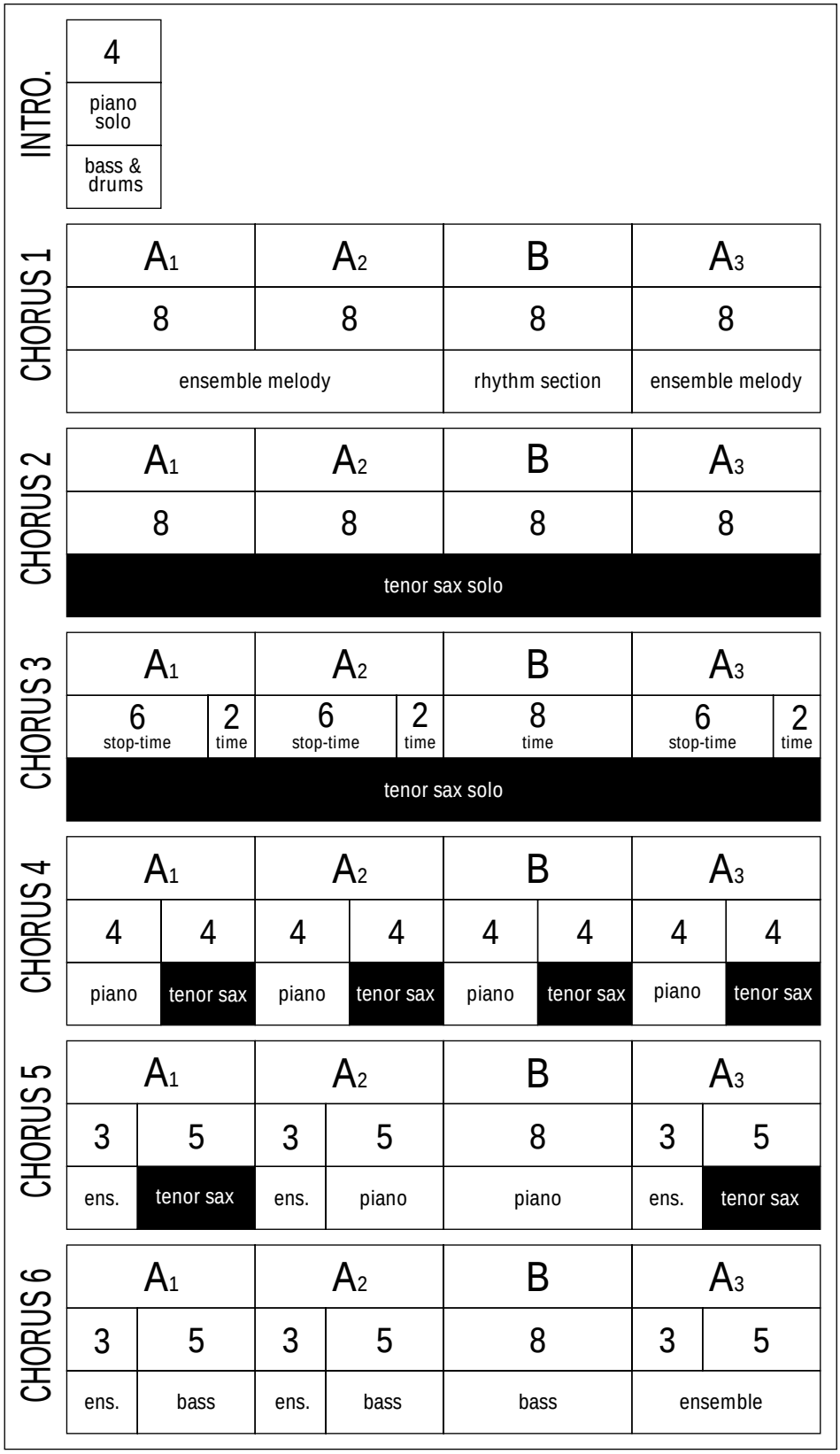
INTRO.
4
piano solo
bass & drums
CHORUS 1
A1
A2
B
A3
8
8
8
8
ensemble melody
rhythm section
ensemble melody
CHORUS 2
A1
A2
B
A3
8
8
8
8
tenor sax solo
CHORUS 3
A1
A2
B
A3
6 stop-time
2 time
6 stop-time
2 time
8 time
6 stop-time
2 time
tenor sax solo
CHORUS 4
A1
A2
B
A3
4
4
4
4
4
4
4
4
piano
tenor sax
piano
tenor sax
piano
tenor sax
piano
tenor sax
CHORUS 5
A1
A2
B
A3
3
5
3
5
8
3
5
ens.
tenor sax
ens.
piano
piano
ens.
tenor sax
CHORUS 6
A1
A2
B
A3
3
5
3
5
8
3
5
ens.
bass
ens.
bass
bass
ensemble

figure: 2

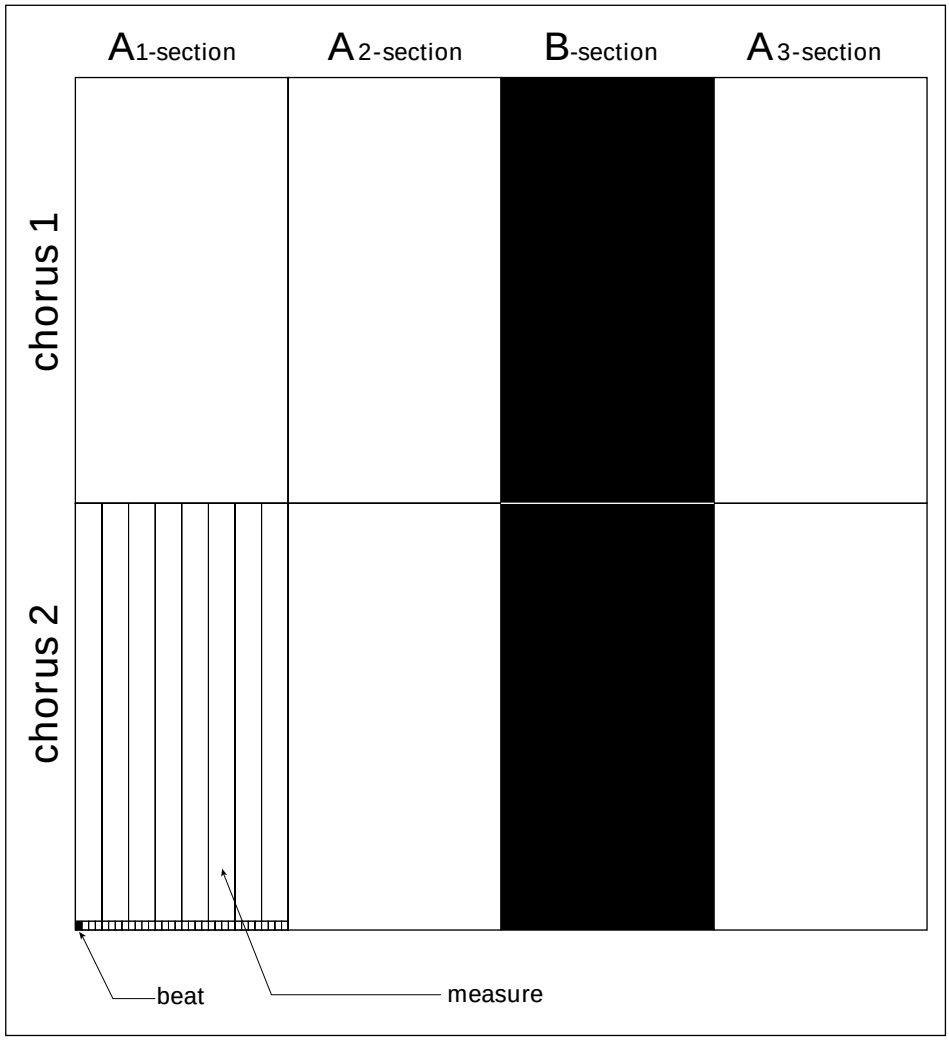
A1-section
A2-section
B-section
A3-section
chorus 1
chorus 2
beat
measure

figure: 3

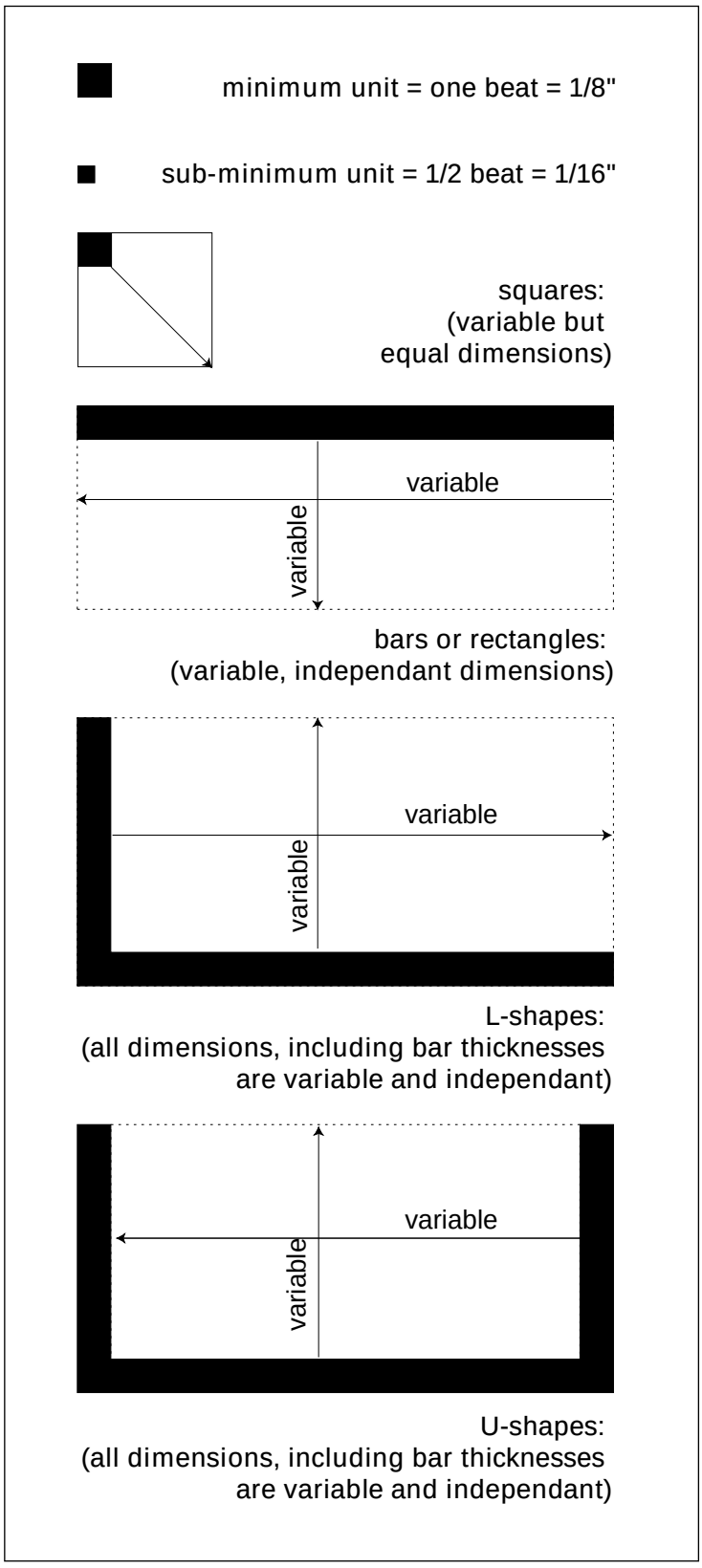
minimum unit = one beat = 1/8"
sub-minimum unit = 1/2 beat = 1/16"
squares:
(variable but
equal dimensions)
variable
variable
bars or rectangles:
(variable, independant dimensions)
variable
variable
L-shapes:
(all dimensions, including bar thicknesses
are variable and independant)
variable
variable
U-shapes:
(all dimensions, including bar thicknesses
are variable and independant)

figure: 4

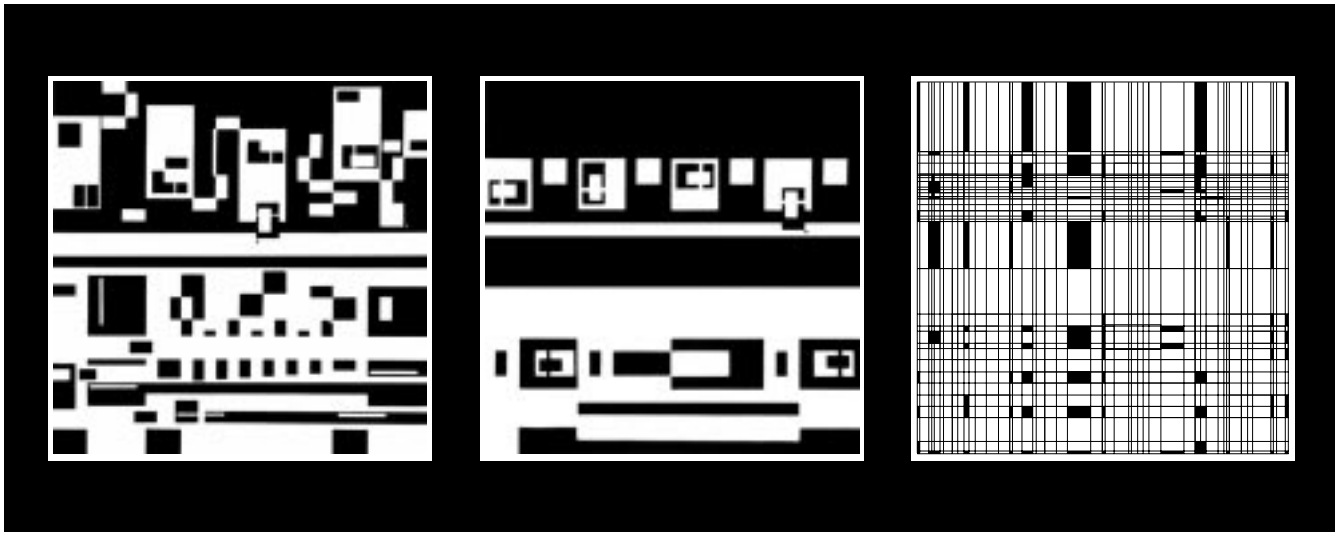

figure: 5

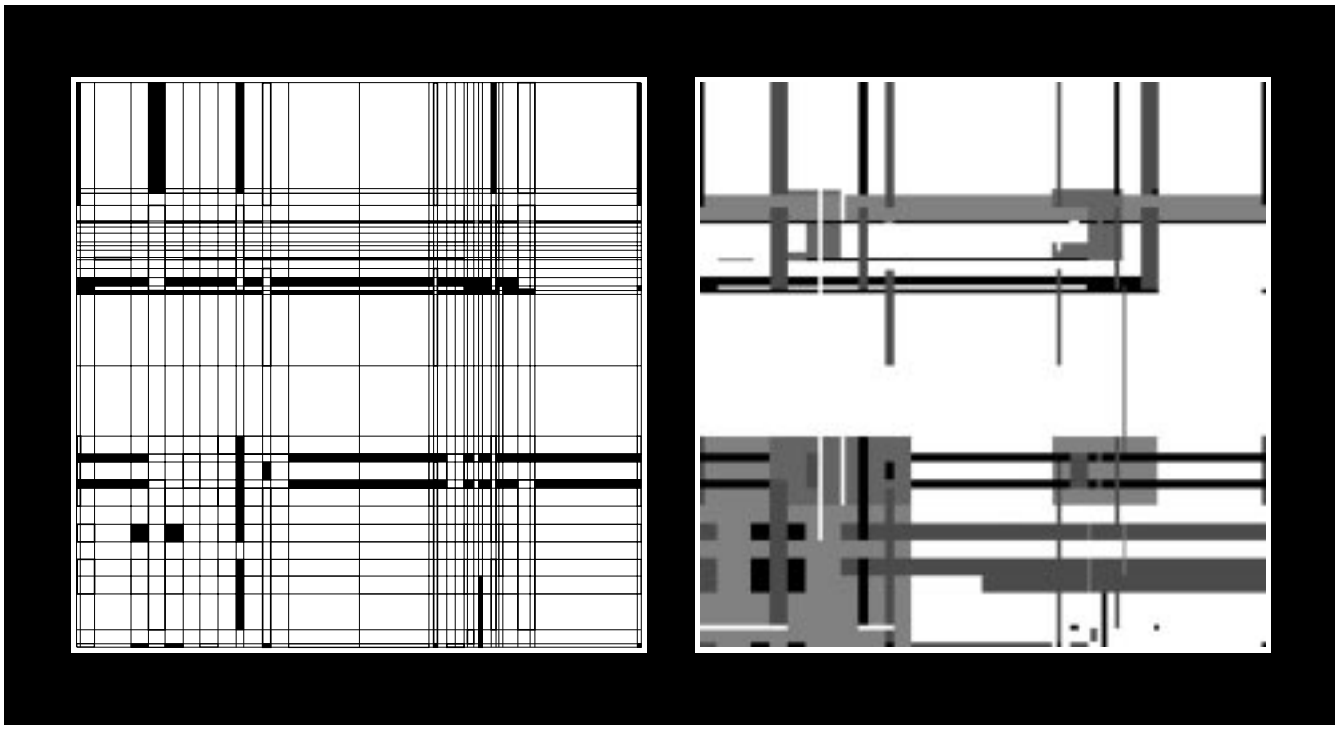

figure: 6

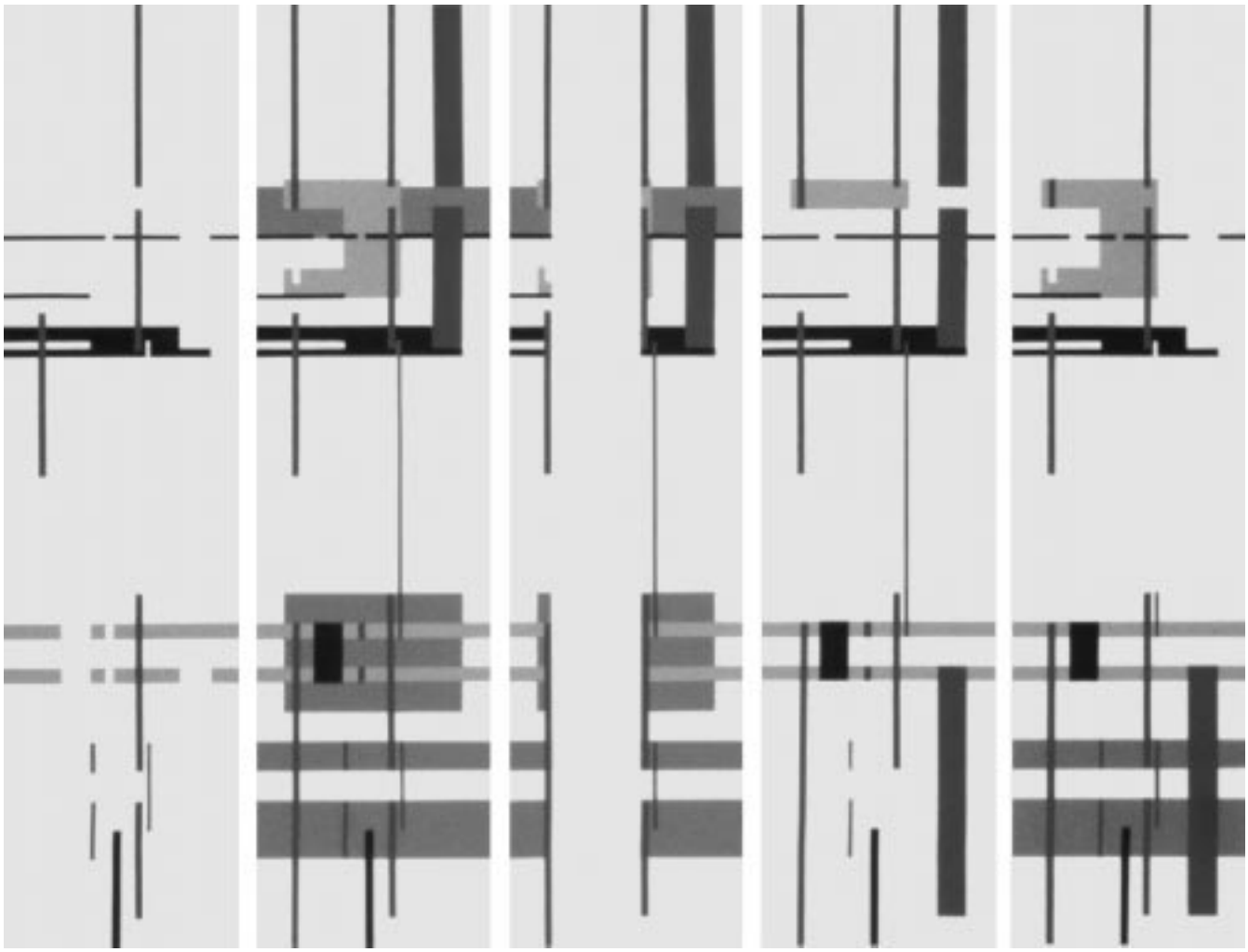

figure: 7

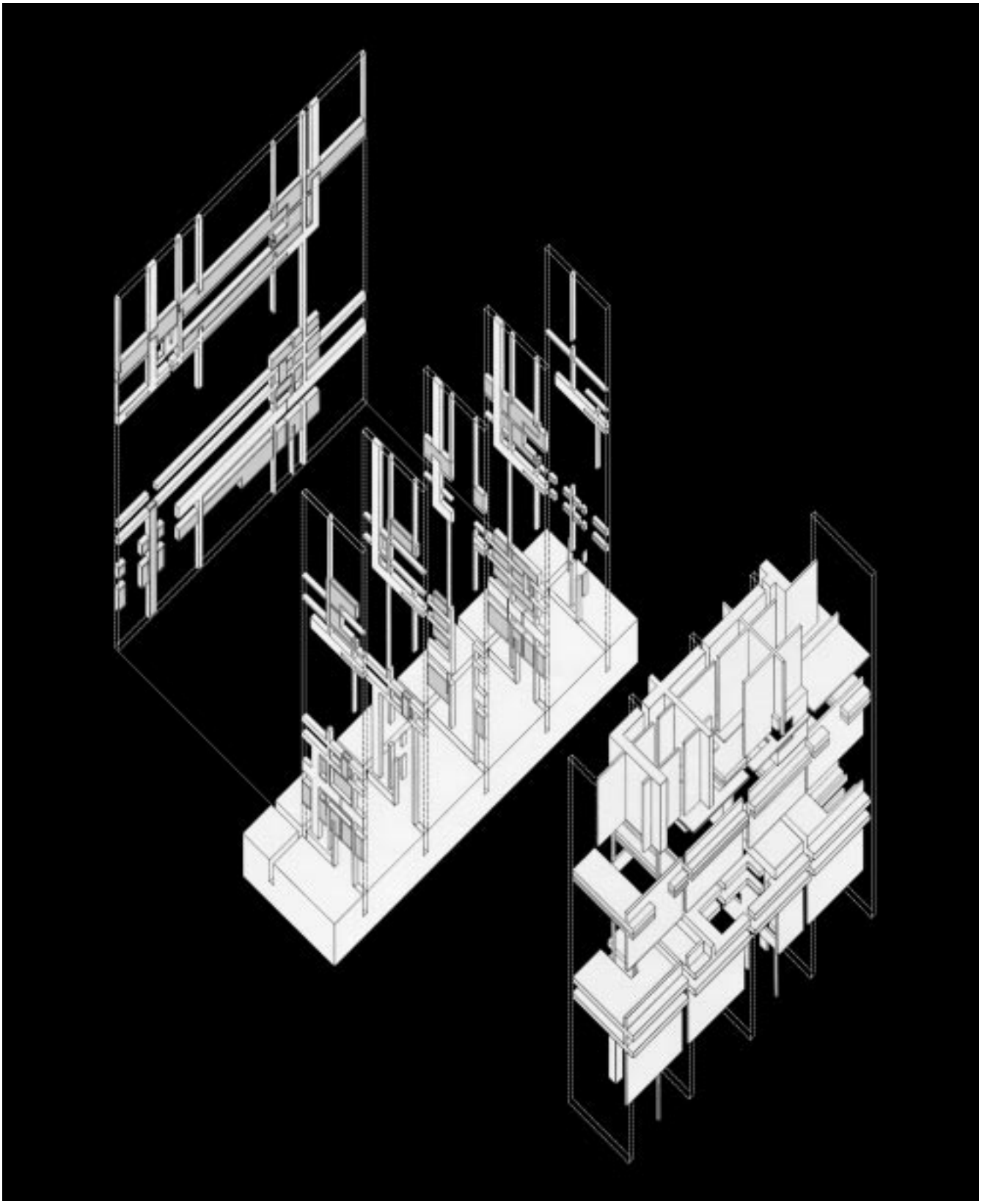

figure: 8