STRAIGHT, CURVING, COLORFUL: THREE ARCHITECTS

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A Thesis

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State University in partial fulfillment of
the requirements for the degree of

MASTER OF MUSIC

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Committee:

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ABSTRACT

Marilyn Shrude, Advisor

_Street, Curving, Colorful: Three Architects_ for clarinet, cello, and computer musically explores the designs of buildings by Mies van der Rohe, Frank Gehry, and Rem Koolhaas in three movements. _Street_ is based on Crown Hall by Mies van der Rohe on the Illinois Institute of Technology (IIT) campus. _Curving_ is based on the Jay Pritzker Pavillion by Frank Gehry at Millenium Park, and _Colorful_ is based on the McCormick Tribune Campus Center by Rem Koolhaas at IIT. The musical language of the piece incorporates salient design features and aesthetics of each building as structural elements used to develop a composition derived from but not literally tied to each building.
ACKNOWLEDGEMENTS

I would like to thank Beth Marshall and Jon Augustine for reading through my piece and providing sound material. I would also like to thank Burton Beerman for helping me with clarinet fingerings. I would like to give special thanks to my committee member, Elainie Lillios, for listening critically and providing many helpful suggestions, as well as inspiring me as a composer, an educator, and a member of the academic community. Finally, I would like to thank Marilyn Shrude for sharing her immense love and knowledge of music with me, for being supportive, and for always pushing me to achieve.
Instructions for Performance

General Notation

- dimuendo al niente
- crescendo dal niente
- gradual increase/decrease in tempo
- repeat notes in box as fast as possible for the duration of the solid line
- glissando should last entire duration of note
- grace note in parenthesis shows the destination note for a gliss./bend without implying duration
- senza misura time signature
- notes without stems should be held for the duration of the solid line
- arrows indicate a cue from another instrument. In this example, the clarinet is cued by the cello

N.B. In senza misura sections, accidentals apply only to the note before which they stand, except in a series of repeating notes.
Clarinet

indicates slow bend between two notes

timbre trill—suggested fingerings are indicated but performers should feel free to use more comfortable fingerings if necessary

fluttertongue

Cello

SP      sul ponticello
ST      sul tasto

---→SP  move to sul pont./ord./sul tasto over duration indicated by the arrow

pizz.   snap (Bartok) pizz.

all harmonics sound as written

ricochet ad lib.  throw bow on the string to produce “bouncing” effect

circ. bowing slowly move the bow in a circular motion between sul ponticello and sul tasto
Electronics

Both the clarinet and cello are lightly amplified with microphones. Instrument levels, the live electronic processing and pre-recorded sounds are controlled using Max/MSP. The acoustic instruments should sound stronger in the mix with the electroacoustic component serving as an extension of the instruments. The piece requires a sound engineer to set an appropriate preliminary mix, and to adjust for any performance problems (e.g., feedback); however, the performers control the execution of cues.

Pedal Marks

Both performers control the electroacoustic component of the piece using two MIDI footswitches (one for each player). Pedals should be pressed at the beginning of the note above the pedal number. In empty bars, press the pedal at the beginning of the bar unless otherwise indicated. Numbers are sequential by cue, not by instrument.

Electroacoustic Notation

The computer staff in the score is meant to give the performers a rough sense of the electroacoustic component of the piece. It is in no way a “diffusion score;” however, it should serve as a visual cue as to specific pre-recorded gestures and live processing. Specific pitches are only indicated where relevant.

Required Equipment

- Macintosh or PC computer with Max/MSP 4.5 or later (or runtime equivalent) installed. Contact the composer at Stevenkemper1981@yahoo.com for the latest copy of the Max patch
- Audio interface with 2 XLR inputs (preamps), 48v phantom power, stereo output
- 2 condenser microphones (or suitable equivalent)
- 2 MIDI foot pedal non-continuous controllers (e.g. keyboard sustain pedal)
- MIDI-computer interface (only 1 ch. input needed)
- Voltage to MIDI converter with 2 1/4” inputs and 1 MIDI output, you may also run foot pedals through a MIDI keyboard
- High quality stereo pair of speakers (active monitors preferred)
- 2 stage monitor speakers (1 for each instrument)

Setup

Clarinet sits stage right of the cello. Clarinet should be patched through channel 1 (left) of the audio interface, cello through channel 2 (right). Performers should face each other as much as possible to avoid feedback.
Program Listing:

*Straight, Curving, Colorful: Three Architects*

I. Straight  
II. Curving  
III. Colorful  

Duration: c. 15’

Program Note:

This piece explores musically the designs of Mies van der Rohe, Frank Gehry, and Rem Koolhaas, three architects I became acquainted with while living in Chicago. Each movement establishes a mood befitting that architect’s work. Though these movements are not connected, thematic material pervades the overall structure, as similar design elements carry across their work.

The architecture of Mies van der Rohe consists of magnificent black steel beams in perpendicular lines. His buildings, such as those on the campus of the Illinois Institute of Technology (IIT), are a testament to modernism. Accordingly, movement one consists of short and repetitive blocks. Rhythmically, this movement shifts between a faster steady tempo and two slower, freer tempos.

Movement two explores the curvilinear forms of Frank Gehry’s architecture. Melodic and rhythmic patterns in the overall structure mimic these curved lines. Curves are also represented on the motivic level through the bending of pitches (e.g., curving the straight line of a held note) and performance techniques such as circular bowing. The movement’s overall contour consists of a pattern similar to a sine wave, representing a circle over time.

Rem Koolhaas’s architecture, such as the student center at IIT, employs many of the perpendicular design elements of Mies, while venturing into the curved forms of Gehry. Since Koolhaas uses color to the greatest extent of these architects, movement three incorporates rich harmonies, a musical characteristic I find analogous to color. This movement consists of some of the short repetitive blocks of the first movement; however, certain repetitions move in unexpected directions.
Machine sounds, delay
Mechanically $\dot{i} = 108$

Cl.

\[ \text{mf} \quad f \quad \text{mp-f} \quad \text{mf} \quad \text{mp} \quad p\text{-mp} \quad \text{mf} \quad \text{mp} \]

Vc.

\[ \text{mf} \quad f \quad \text{mp-f} \quad \text{mf} \quad \text{mp} \quad p\text{-mp} \quad \text{mf} \quad \text{mp} \]

Comp.

[54]

\[ \text{mf} < f \quad p \quad \text{ff} \quad \text{sffz} \quad \text{flz.} \quad \text{flz.} \]

Cl.

\[ \text{mf} < f \quad p \quad \text{ff} \quad \text{sffz} \quad \text{flz.} \quad \text{flz.} \]

Vc.

\[ \text{mf} < f \quad p \quad \text{ff} \quad \text{mp} \]

Comp.

[58]

\[ \text{High electronic sound} \]

\[ \text{Comb filter} \]
rit. \ldots poco \ldots a \ldots poco. 

Cl. 

\begin{music}
\begin{staff}
\mid \underline{m}\text{-}f \underline{f} \underline{f}
\end{staff}
\end{music}

Vc. 

\begin{music}
\begin{staff}
\mid \underline{m}\text{-}f \underline{f} \underline{f}
\end{staff}
\end{music}

Comp. 

\begin{music}
\begin{staff}
\mid \text{Delay on}
\end{staff}
\end{music}

\begin{music}
\begin{staff}
\mid \text{Delay off}
\end{staff}
\end{music}

---

\text{Sluggishly } j = 40

Cl. 

\begin{music}
\begin{staff}
\mid p \underline{f} \underline{mp} \text{ sub } pp \underline{f} \text{ sffz}
\end{staff}
\end{music}

Vc. 

\begin{music}
\begin{staff}
\mid p \underline{f} \underline{mp} \text{ sub } pp \underline{f} \text{ sffz}
\end{staff}
\end{music}

Comp. 

\begin{music}
\begin{staff}
\mid \text{Dense chords}
\end{staff}
\end{music}

\begin{music}
\begin{staff}
\mid \text{Comb filter on}
\end{staff}
\end{music}
Mechanically \( \mathbb{J} = 108 \)

Playback of recorded sounds
II. Curving

Mysteriously $\frac{3}{4} = 60$

Clarinet in B

<table>
<thead>
<tr>
<th>Measure</th>
<th>Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
</tbody>
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Violoncello

<table>
<thead>
<tr>
<th>Measure</th>
<th>Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Computer

<table>
<thead>
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<th>Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Metallic sound

Delay on

Water sound

Cl.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

Vc.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

Metallic sound

Delay on

Water sound

Comp.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>
Espressivo

Aggressively $\downarrow = 84$

Comb filter off
Cl. | Vc. | Comp.
--- | --- | ---

46 bend

Expressively $\frac{1}{4}$ = 72

Cl. | Vc. | Comp.
--- | --- | ---

47 accel.

Water sound
Aggressively $J = 84$

Cl.

Vc.

Comp.

Comb filter on

Delay on

$p$

$\text{Sul C}$

$\text{p cresc. poco a poco}$

$f$

$\text{fl}z$

$\text{sf}z$

$\text{mp}$
Cl.

Woodwind

Vc.

Violin

Comp.

Metallized sound
III. Colorful

Energetically $\frac{1}{3} = 132$

Clarinet in B♭

Violoncello

Computer

Chordal bursts

Cl.

Vc.

Comp.

molto legato

molto legato

molto legato

Comb filter on

Chordal burst
**Cl.**

```
\[ \begin{array}{c}
\underline{\text{sfz}} \text{ mf} \text{ mp} \text{ f} \\
\end{array} \]
```

**Vc.**

```
\[ \begin{array}{c}
\underline{\text{mf}} \text{ mp} \text{ p} \\
\end{array} \]
```

**Comp.**

```
\[ \begin{array}{c}
\text{Bouncing sound} \\
\end{array} \]
```

**Cl.**

```
\[ \begin{array}{c}
\underline{\text{sfz}} \text{ mf} \text{ mp} \text{ f} \\
\end{array} \]
```

**Vc.**

```
\[ \begin{array}{c}
\underline{\text{mf}} \text{ mp} \text{ p} \\
\end{array} \]
```

**Comp.**

```
\[ \begin{array}{c}
\text{Delay on} \\
\text{Delay off} \\
\text{Bouncing pizz.} \\
\end{array} \]
```

**Vc.**

```
\[ \begin{array}{c}
\text{Delay on} \\
\text{Delay off} \\
\text{Bouncing pizz.} \\
\end{array} \]
```
Sparingly $J = 108$

Cl.

mf

sfz

mp

<> f<>

Vc.

mf

mp

<> <> mf<>

Chordal bursts

Delay on

Comp.

Cl.

p f

p mf

mp f

PPP

*as fast as possible

c. 5"

Vc.

f p

mp f

PPP

SP *as fast as possible

Delay off

Comp.
Fluidly $q = 84$

Comb filter off
Energetically $j = 132$

Cl.  

Vc.  

Comp.  

Chordal burst

Buildup of elec. sounds
Forcefully $\downarrow = 60$

Cl.

Vc.

Comp.

Cl.

Vc.

Comp.