Raising the roof will not be necessary
Schoenstein & Co. Opus 147
First United Methodist Church, Birmingham, Michigan
(Article reprinted from *The Diapason* dated September, 2007)

Fact: An organ's most important stop is the room in which it plays.

Lesser-Known Fact: Improvement opportunities exist for churches with poor acoustics that go beyond dismissing the carpet and pew cushions.

When First United Methodist Church of Birmingham, Michigan received a generous gift for the replacement of its aging Möller organ, the church quickly realized a careful study of all aspects of the sanctuary should be undertaken. It was felt the new instrument, as well as their entire worship experience, would benefit from an improved acoustical environment.

Church Renovation

Our first visit to Birmingham found a 1952 building of fine materials that enveloped an acoustically dead sanctuary. Jack Bethards, Schoenstein & Co. President and Tonal Director, reported that "When I first looked at this room, I wondered if there was any hope. The room had hardly any resonance, and there were frequency hot spots that added a kind of harshness to musical tone. Worst of all, it was tough to sing in the room because people felt isolated from one another."

The new organ could only achieve its potential if the acoustic of the building were improved. Every possible idea was discussed, including raising the roof to increase cubic volume. This would have added millions of dollars to the project, and it was hoped that significant enough improvement could be attained through less invasive methods.

Ultimately a plan of action was decided upon to:

- Install a beautiful and reflective hard-tile floor in the chancel.
- Install new chancel walls with increased organ tone-opening area.
- Change the height of the chamber ceilings to eliminate sound-defeating pockets.
- Install an Electronic Reflected Energy System (ERES) by the Jaffe-Holden Company.

The project also grew in scope to address other needs:

- Improve sight lines for the congregation by raising the chancel floor, along with other changes enabling flexibility for a variety of programs in addition to Sunday morning worship.

- Install an improved, quieter, HVAC system.

- Updates to lighting, the public address system, walls and floor coverings.

The result is one of the finest sanctuary renovations we have seen. The reflective flooring in the chancel has provided a pleasant natural bloom of resonance, and the Jaffe-Holden system has added a tasteful and subtle acoustical ambiance only otherwise possible with a roof raising. The new HVAC system is accurate, well balanced, and above all, silent. The improved temperature and humidity control will positively affect the stability and longevity of the organ. The renovation team did a magnificent job of freshening up and improving the visual elements of the room.

Fact: An organ's most important stop is the room in which it plays.

Lesser-Known Fact: A properly designed and built organ can make a room sound better than its acoustic.

The Schoenstein organ

In the organ dedication program notes, Jack Bethards addressed the organ and its relationship to the church. "With all of the elements working together to enhance music, a logical question would be why was a new organ necessary? Certainly the sound of the old organ would have been enhanced, but would it have been enough to solve the various musical problems that faced Doris and Chris Hall (organist and director of music respectively) when they called us in to study the situation? Simply put, the old organ was designed to match a particular approach to a limited part of the organ solo repertoire; the new organ is designed to accompany the church service."

The new organ (three manuals, 38 voices, 46 ranks) has a vastly different effect in the room from the previous instrument, despite its similar physical layout. The unenclosed Great is divided on either side of the altar and takes advantage of its favorable location, speaking down the axis of the church. The Choir is located in one side chancel chamber and the Swell in the other. A small Antiphonal division across the balcony wall complements the organ by drawing the sound of the chancel organ rearward to support congregational singing.

According to Bethards, "The biggest concern in a church organ is to have a large variety of different tone qualities. There are two reasons for this. First, the organ is played by and heard by the same people week after week, year after year. To sustain musical interest, the sound can't be the same all the time. Second, a good choir sings just about every kind of choral music written. This demands great subtlety in accompaniment with different tone colors at a multitude of volume levels."

Eight-foot diapasons of various types were used throughout to provide richness and warmth of tone in both melody and bass pitch. The old organ overemphasized upperwork, and the effect of the ensemble was harsh. With the goal being an effect of nobility, full choruses were maintained, but less upperwork was planned and more foundational stops were added to lower the tonal center of gravity and provide contrasting color. Note the Great with its four eight-foot stops, a Harmonic Flute and Gamba in addition to the Open Diapason and Bourdon.

True string stops of varied character complement each division, with an additional hybrid or muted Corno Dolce in the Swell. A wide variety of flutes were employed with the emphasis on full and double-length open construction rather than half-length stopped flutes that are less successful in rooms with drier acoustics.

Solo reeds, including the Oboe and Clarinet, are more orchestral in character than the old organ. There are four chorus reeds, ranging in volume from *mezzo forte* of the Choir Trumpet, through the Swell Trumpet and Contra Fagotto's *forte* to the Tuba's *fortissimo*, vital especially for festive services and weddings.

Schoenstein's double expression system is used in the Swell organ. The softest and loudest stops of the division are grouped in the Inner Swell chamber, behind a second set of expression shades controllable by a separate shoe. This allows for very smooth and dramatic crescendos with a minimum of stop changes.

The new instrument is six ranks smaller than the old, but projects far more effectively due to its energized tone that enables more effective egress from enchambered installations. The highest wind pressure on the previous organ was four inches; this pressure is still found in the new unenclosed Great. Five inches is the lowest pressure for enclosed stops. Enchambered offset basses are on still higher pressure to further help them project, as are the unenclosed Pedal Subbass and Double Open Diapason (the bottom octave of which is an Open Wood).

The double-enclosed Swell chorus reeds and Mixture are on ten inches, as is the Choir Tuba. As Jack Bethards points out, "Pressure does not necessarily affect loudness, but it certainly affects carrying power and smoothness of tone. A selection of stops that are highly energized in tone and, therefore, can project their sound over a long distance, is one of the keys to a successful enchambered organ."

Fact: An organ's most important stop is the room in which it plays.

Lesser-Known Fact: The design elements that favor acoustical projection also favor the variety of tone needed in a church organ.

Todd Wilson played the organ dedication concert in November 2005. Other recent recitalists in the church's *Live at First* concert series include Frederick Swann, Doris Hall, and Tom Trenney.

As is nearly always the case, the success of this project is due to the efforts of too many people to name in this limited space. We had wonderful support in every area and would like to especially thank the church staff and the dedicated volunteers who worked under organ committee chairperson Dale Parker and project manager Darrell White. We are also appreciative of the church's fine musicians, Doris and Chris Hall, who make the new organ shine.

And raising the roof was not necessary.

David Beck
Installation crew leader & assistant voicer
Schoenstein & Co.

FIRST UNITED METHODIST CHURCH
BIRMINGHAM, MICHIGAN
Three Manual and Pedal Organ
38 Voices – 46 Ranks
Electric-Pneumatic Action

***GREAT** (II - In Display)*

16'	**Contra Viola** (*Choir*)		
8'	**Open Diapason**	61	Pipes
8'	**Harmonic Flute**	61	"
8'	**Gamba**	61	"
8'	**Bourdon**	61	"
4'	**Principal**	61	"
4'	**Spire Flute**	61	"
$2^2/_3$'	**Twelfth**	61	"
2'	**Fifteenth**	61	"
2'	**Mixture** (*III - IV Ranks*)	187	"
8'	**Tuba** (*Choir*)		
8'	**Trumpet** (*Choir*)		
8'	**Clarinet** (*Choir*)		
	Chimes (*Deagan in Choir Box*)	25	Tubes

***SWELL** (III - Expressive)*

16'	**Bourdon** (*Wood*)	12	Pipes
8'	**Open Diapason**	61	"
8'	**Stopped Diapason** (*Wood*)	61	"
8'	**Echo Gamba**	61	"
8'	**Gamba Celeste** (*TC*)	49	"
8'	**Corno Dolce** (*S.t Diapason Bass*)	49	"
4'	**Gemshorn**	61	"
4'	**Harmonic Flute**	61	"
2'	**Flageolet**	61	"
8'	**Oboe**	61	"
	Tremulant		
	Stops Under Double Expression		
2'	**Mixture** (*III - IV Ranks*)†	209	"
16'	**Contra Fagotto**†	61	"
8'	**Trumpet**†	61	"
	†Heavy Wind		
	Swell 16'		
	Swell Unison Off		
	Swell 4'		

***CHOIR** (I - Expressive)*

16'	**Contra Viola**	12	Pipes
8'	**Viola Pomposa**	61	"
8'	**Viola Celeste**	61	"
8'	**Concert Flute** (*Wood*)	61	"
8'	**Lieblich Gedeckt** (*Concert Flt Bass*)	49	"
4'	**Fugara**	61	"
4'	**Lieblich Flute**	12	"
$2^2/_3$'	**Nazard** (*From Lieblich Flute*)		
2'	**Harmonic Flute**	61	"
$1^3/_5$'	**Tierce** (*TC*)	42	"
2'	**Mixture** (*II - III*)	173	"
8'	**Trumpet**	61	"
8'	**Clarinet**	61	"
	Tremulant		
16'	**Ophicleide**†	12	"
8'	**Tuba**†	61	"
4'	**Tuba Clarion**†	12	"

†Heavy Wind
Choir 16'
Choir Unison Off
Choir 4'

***PEDAL** (In Display with Great)*

32'	**Resultant**		
16'	**Double Open Diapason**	12	Pipes
16'	**Sub Bass**	32	"
16'	**Contra Viola** (*Choir*)		
16'	**Bourdon** (*Swell*)		
8'	**Principal**	32	"
8'	**Diapason** (*Swell*)		
8'	**Flute** (*Great*)		
8'	**Viola** (*Choir*)		
8'	**Bourdon** (*Swell*)		
4'	**Fifteenth**	12	"
4'	**Flute** (*Great*)		
16'	**Ophicleide** (*Choir*)		
16'	**Contra Fagotto** (*Swell*)		
8'	**Tuba** (*Choir*)		
8'	**Fagotto** (*Swell*)		
4'	**Clarinet** (*Choir*)		

MECHANICALS

Solid State Capture Combination Action with:

- 100 Memories
- 61 Pistons and toe studs
- Programmable piston range for each memory
- Crescendo Pedal
- 5 Reversibles including Full Organ

***ANTIPHONAL** (Floating - In Display)*

8'	**Open Diapason**	61	Pipes
8'	**Dulciana** (*Bourdon Bass*)	49	"
8'	**Bourdon**	61	"
4'	**Principal**	61	"
	Antiphonal 4'		

***ECHO** (Floating - Expressive)*

8'	**Gedeckt**	61	Pipes
8'	**Viole**	61	"
8'	**Celeste**	49	"
4'	**Flute**	61	"
8'	**Vox Humana**	61	"
	Tremulant		
	Echo 4'		

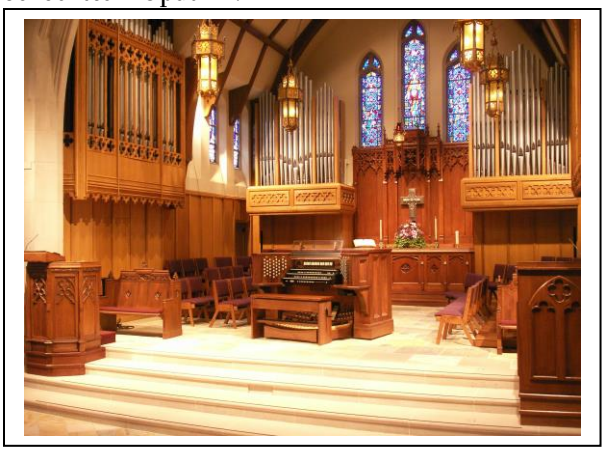
Note: Echo organ as is. Reconstruction by others.

COUPLERS

Great	to	Pedal	
Swell	to	Pedal	
Swell	to	Pedal	4'
Choir	to	Pedal	
Choir	to	Pedal	4'
Swell	to	Great	16'
Swell	to	Great	
Swell	to	Great	4'
Choir	to	Great	16'
Choir	to	Great	
Choir	to	Great	4'
Swell	to	Choir	16'
Swell	to	Choir	
Swell	to	Choir	4'
Antiphonal	on	Pedal	
Antiphonal	on	Great	
Antiphonal	on	Choir	
Echo	on	Swell	
Echo	on	Choir	

Note: Antiphonal and Echo intramanual couplers read through intermanual couplers.

Schoenstein Opus 147



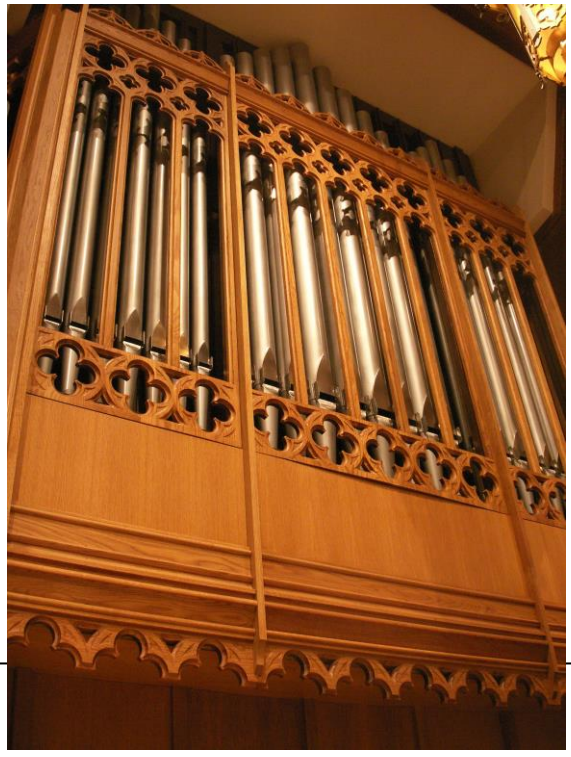
Antiphonal

Console

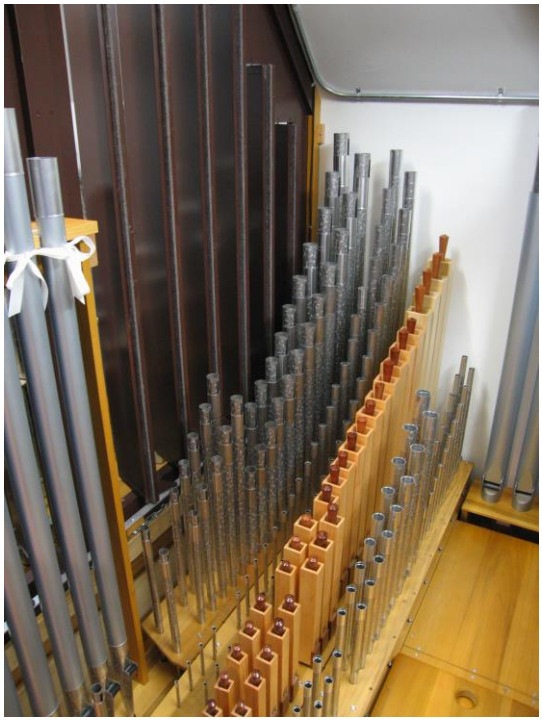
The Unenclosed Great & Pedal divisions

The Choir chorus reeds & flue work

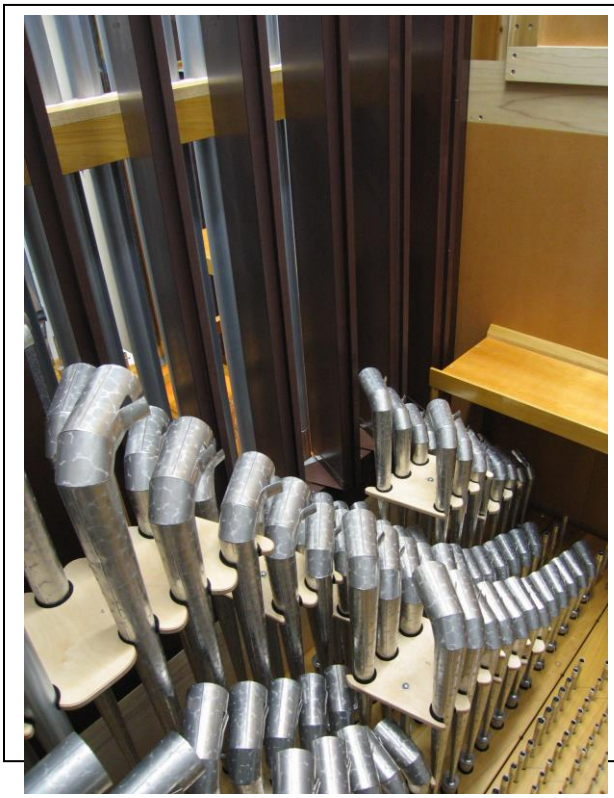
The enclosed Choir division



Part of the flue work of the Outer Swell



The Inner Swell chorus reeds looking through to the Outer Swell



The Inner Swell chorus reeds