

Sydney Town Hall Organ Technical Specification

**SYDNEY TOWN HALL
GRAND ORGAN
Technical Specification**

Internally the instrument is spacious. Pine is used for the frame of the organ and for the wooden pipes. The generously proportioned slider chests, which are of mahogany, have separated tables and upper boards. Metal pipes are of spotted metal down to 6'. The key action works on 10" of negative (vacuum) pressure. The coupling action is mechanical except for pneumatic assistance for those couplers to the great. This Barker Lever assistance also operates on 10" pressure unless fewer than four couplers are in operation, in which case it automatically trips back to 5" in order to reduce rattling. In the original blowing apparatus, the engine automatically operated at one of three speeds, depending on the wind demand.

As may be expected with such a large organ, several new stops appeared. While the Great Contra Bourdon 32' was extremely rare, the Pedal Contra Trombone 64' was absolutely unique, with Hill never having the opportunity to build another. The Solo Doppel Flote (two mouths on each pipe) was the first made by Hill, while the Swell Horn 8', containing a diaphragm in the middle of the tube and the Celestina 4' (not an undulating stop), were a new Hill inventions.

PEDAL ORGAN

Double Open Diapason	32' Metal
Double Open Diapason	32' Wood
Contra Bourdon	32' Wood
Open Diapason	16' Wood
Bourdon	16' Wood
Violone	16' Wood
Gamba	16' Wood
Dulciana.	16' Metal
Quint	12' Wood
Octave	8' Metal
Prestant	8' Metal
Bass Flute	8' Wood
Violoncello	8' Wood
Twelfth	6' Metal
Fifteenth	4' Metal
Mixture 4 Rks .	Metal
Mixture 3 Rks	Metal
Mixture 2 Rks ..	Metal
Contra Trombone .	64' Wood
Contra Posaune	32' Metal
Posaune	16' Metal
Harmonic Flute	4' Metal
Gemshorn	4' Metal
Twelfth	3' Metal
Fifteenth .	2' Metal
Piccolo	1' Metal
Mixture 4 Rks .	Metal
Furniture 5 Rks	Metal
Trombone	16' Wood/Metal
Bassoon* .	16' Metal

Trumpet .	8' Metal
Cornopean	8' Metal
Horn .	8' Metal
Oboe	8' Metal
Clarion ..	4' Metal
* This stop on 3 1/2 inch wind.	

CHOIR ORGAN (Enclosed)

Contra Dulciana	16' Metal
Open Diapason .	8' Metal
Hohl Flote .	8' Wood
Lieblich Gedackt	8' Wood/Metal
Trombone .	16' Wood/Metal
Bassoon .	16' Metal
Trumpet	8' Metal
Clarion	4' Metal

SWELL ORGAN (Enclosed)

Double Open Diapason.	16' Metal
Bourdon .	16' Wood
Open Diapason .	8' Metal
Hohl Flote.	8' Wood
Viola di Gamba .	8' Metal
Salicional	8' Metal
Vox Angelica	8' Metal
Octave .	4' Metal
Rohr Flote .	4' Wood/Metal

GREAT ORGAN

Contra Bourdon	32' Wood
Double Open Diapason	16' Metal
Bourdon	16' Wood
Open Diapason No. 1*	8' Metal
Open Diapason No. 2*	8' Metal
Open Diapason No. 3*	8' Metal
Open Diapason No. 4*	8' Metal
Harmonic Flute	8' Metal
Viola 8. *	8' Metal
Spitz Flote	8' Metal
Gamba	8' Metal
Hohl Flote	8' Wood
Rohr Flote	8' Wood/Metal
Quint	6' Metal
Principal	4' Metal
Octave	4' Metal
Gemshorn	4' Metal
Harmonic Flute *	4' Metal
Twelfth	3' Metal
Fifteenth	2' Metal
Mixture 3 Rks	Metal
Cymbel 4 Rks *	Metal
Sharp Mixture 4 Rks	Metal
Furniture 5 Rks *	Metal
Posaune ..	16' Metal
Flauto Traverso	8' Metal
Gamba	8' Metal
Dulciana	8' Metal
Octave	4' Metal
Violino	4' Wood
Celestino	4' Metal
Lieblich Flote .	4' Wood/Metal
Twelfth	3' Metal
Fifteenth .	2' Metal
Dulcet	2' Metal
Dulciana Mixture 3 Rks	Metal
Bassoon .	16' Metal
Oboe	8' Metal
Clarinet .	8' Metal
Vox Humana ..	8' Metal
Octave Oboe	4' Metal

SOLO ORGAN

(Orchestral Reeds enclosed)

Bourdon .	16' Wood
Open Diapason .	8' Metal
Violin Diapason	8' Wood
Flauto Traverso	8' Wood
Doppel Flote .	8' Wood
Stopped Diapason .	8' Wood
Viola	8' Metal
Octave	4' Metal
Harmonic Flute	4' Metal
Flauto Traverso	4' Wood
Harmonic Piccolo .	2' Metal
Contra Fagotto	16' Metal
Harmonic Trumpet	8' Metal
Corno di Bassetto	8' Metal
Orchestral Oboe	8' Metal
Cor Anglais .	8' Metal
Octave Oboe	4' Metal
Contra Tuba .	16' Metal
Tuba .	8' Metal
Tuba Clarion	4' Metal
Carillon Bells	2' Metal
*27 Metal Bars from a	

ECHO ORGAN

Posaune .	8' Metal
Trumpet	8' Metal
Clarion .	4' Metal
*These stops on 5 inch wind	

COUPLERS

Great to Pedal
Swell to Pedal
Choir to Pedal
Solo to Pedal
Swell to Great *
Swell Super Octave * [to Great]
Swell Sub Octave * [to Great]
Solo to Great *
Solo Octave
Choir to Great *
Solo to Choir
Echo to Swell
Swell to Choir
Pedal combinations to Great Pistons

WIND PRESSURES

Great Organ:	Flues	3 1/2"
	Reeds	5"
Swell Organ:	Flues	3 1/2"
	Reeds	5"
Choir Organ:	Flues	2 3/4"
	Reeds	2 3/4"
Solo Organ:	Flues	3"
	Orchestral Reeds	5"
	Tubas	10"
Echo Organ:		2 1/4"
Pedal Organ:	Flues	3 1/4"
	Reeds	4 1/2"

ACTION

Key action:	Tubular-pneumatic (Vacuum)
Stop and piston action:	Pneumatic
Coupling action:	Mechanical with pneumatic lever assistance for Great key and coupling action for those couplers marked *

TREMULANTS

One lever for Solo and Swell

One lever for Choir

COMPASS:

Manuals: 61 notes

Pedals: 30 notes

ACCESSORIES

8 Combination Pistons to Great Organ

8 Combination Pistons to Swell Organ

7 Combination Pistons to Choir Organ

7 Combination Pistons to Solo Organ

3 Combination Pistons to Echo Organ

6 Combination Pistons to Pedal Organ

COMPOSITION STOPS

Pedal

The Mixture 4 Rks. and the Mixture 2 Rks. complement each other as the two primary mixtures, their tone being brighter than the flutier Mixture 3 Rks. None of the mixtures break back.

Mixture 4 Rks. 3 1/5' - 2 2/3' - 2' - 1 1/3'

Mixture 2 Rks. 1 1/3' - 1'

Mixture 3 Rks. 3 1/5' - 2 2/3' - 2'

Great

The arrangement of the mixtures indicates a two chorus concept, the brighter Mixture 3 Rks. and Cymbel 4 Rks. belonging to the main chorus, and the slightly softer Sharp Mixture 4 Rks. to the secondary chorus. The Furniture 5 Rks. which at c#2 breaks back very suddenly to 8' basis, functions as a treble strengthener for the reeds. Both the Cymbel 4 Rks. and the Furniture 5 Rks. imply a 16' foundation.

Mixture 3 Rks.

C-f# 1 3/5' - 1 1/3' - 1'

g-a 2' - 1 1/3' - 1'

a#1-c4 4' - 2 2/3' - 2'

Cymbel 4 Rks.

C-c 1 1/3' - 1' - 2/3' - 1/2'

c#-c1 2' - 1 1/3' - 1' - 2/3'

c# 1-c2 2 2/3' - 2' - 1 1/3' - 1'

c# 2-c4 5 1/3' - 4' - 2 2/3' - 2'

Sharp Mixture 4 Rks.

c-f#	1 1/3' - 1' - 4/5' - 2/3'
g-c2	2' - 1 3/5' - 1 1/3' - 1'
c#2 - c4	4' - 2 2/3' - 2' - 1 3/5'

Furniture 5 Rks.

C-c	1 3/5' - 1 1/3' - 1' - 2/3' - 1/2'
c#-c1	2' - 1 3/5' - 1' - 2/3'
c#1-c2	2 2/3' - 2' - 1 3/5' - 1 1/3' - 1'
c#2-c4	8' - 5 1/3' - 4' - 2 2/3' - 2'

Swell

While the Mixture 4 Rks. completes the chorus, the Furniture 5 Rks. which, like its counterpart on the Great, breaks back enormously at c#2, complements the reeds, imparting brilliance in the bass and solidarity in the treble. This was almost certainly Hill's answer to the use by many other organ builders of higher treble wind pressures for the reeds.

Mixture 4 Rks.

C-c	1 1/3' - 1' - 2/3' - 1/2'
c#-c1	2' - 1 1/3' - 1' - 2/3'
c#1-c2	2 2/3' - 2' - 1 1/3' - 1'
c#2-c4	5 1/3' - 4' - 2 2/3' - 2'

Furniture 5 Rks.

C-c1	1 3/5' - 1 1/3' - 1' - 2/3' - 1/2'
c#1-c2	2' - 1 3/5' - 1 1/3' - 1' - 2/3'
c#2-c4	5 1/3' - 4' - 2 2/3' - 2' - 1 1/3'

Choir

The single mixture on this division is a softer version of the Great Mixture 3 Rks.

Mixture 3 Rks.

C-g	1 3/5' - 1 1/3' - 1'
g#-a#1	2' - 1 1/3' - 1'
b1-c4	4' - 2 2/3' - 2'

Echo

Echo Dulciana 4 Rks. No breaks 8' - 4' - 2 2/3' - 2'. This stop functions as a soft chorus. The 8' is a metal Gedackt, the remainder narrow-scaled open pipes.

Glockenspiel 4 Rks. tenor c. No breaks. 8' - 2 2/3' - 1 3/5' - 1' This stop functions as a solo Cornet. The 8' is a wooden Gedackt, the remainder Principal scaled open pipes.

In general, the mixtures impart a distinctly classical flavour to the choruses, adding considerable brilliance to the treble as well as to the bass regions. Even though most mixtures contain thirds in at least part of their registers, the overall impression is one of coherence and balanced richness. The tonal foundation of the instrument is its strong Principal Chorus, and even the addition of the Solo tubas to the full organ cannot completely obliterate the sparkle of these choruses. There can be no doubt that much of the enduring greatness of the organ is due to this very traditional, and for its period, rather conservative, aspect of its tonal design.

CHANGES FROM THE ORIGINAL 1890 SPECIFICATION

The 1982 restoration, so ably carried out by the Sydney firm of Roger H. Pogson Pty. Ltd. did not take the organ back exactly to its original state. During its eighty-odd year life, the organ had seen many changes; some only small and others quite significant. While many of these were reversed, others were retained.

Nonetheless, the work carried out on the organ can fairly be described as a restoration, and a fulfilment of the Council's instruction, "*as near as practicable*". In all important aspects, notably the stop list and the action, the original has been adhered to. After the pipes had been cleaned, it was found that virtually no voicing was required.

1. Modern concert pitch, to which the organ was tuned in 1939, was retained. A return to the original higher pitch would have rendered the combining of the organ with other instruments almost impossible.
2. The electric duplex blowers installed in 1929 were retained in preference to the original, and often troublesome, gas engine operated bellows.
3. The balanced swells were retained in preference to the original trigger swells. Furthermore, swell boxes added to the entire Choir (originally reeds only) and to the Solo orchestral reeds, were retained.
4. Two foot levers originally operating the Solo to Great and the Great to Pedal drawstops have disappeared. No mechanism for them has survived and they have not been replaced. They were originally to the left of the Pedal combination levers.
5. The pedal board is now concave and radiating. The original, which was replaced at least two pedal boards ago, was straight.
6. The stop list varies in only two details:
 - a. the present Swell Piccolo 1' was originally a 2' stop. Wiegand had the change made so early in the organ's history that it can almost be said that the stop was always a 1'.
 - b. the Carillon, added to the Solo during the 1890s, was retained.