Index

Buildings are indexed by location. References to illustrations are in boldface type.

Aalto, Alvar, 276, 277–281, 332, 337 n. 5
Abel, Carl Friedrich, 28, 29, 31, 32, 35
Abel and Gutbrod, 304, 332
Abramovitz, Max, 284, 287
Académie Royale de Musique (Paris), 109
Academy of Ancient Music (London), 40
Accademia degli Immobili (Florence), 73
Accademia Filarmonica (Verona), 83
Acoustical clarity, 8, 17, 38, 57, 94, 178, 225, 243, 251, 258, 259, 260, 263, 271, 286, 289–290, 298, 304, 349 n. 23
Acoustical echo, 94, 156, 158, 193, 238, 239, 260, 262, 263, 271
Acoustical horns, 25, 26
Acoustical intimacy, 17, 57, 217, 286, 290
Acoustical Investigation and Research Organisation (AIRO), 294
Acoustically coupled rooms, 100, 178
Acoustical models, conceptual, 235, 251, 262
Acoustical myths, 204, 219, 260
Acoustical prediction, 205, 235, 243, 245, 351 n. 31. See also Reverberation calculation
Acoustical quack cures, 245
Acoustical ray diagram, 81, 193, 235, 237, 251, 262
Acoustical resonating chamber, 94–95
Acoustical troughs, 95, 112
Acoustic “clouds,” 159
Acoustics. See also Assisted resonance; Grazing incidence; Haas effect; Isacoustic curve; Noise; Reverberation; Sound; Spatial impression; Tone
and arithmetical proportions, 219 (see also Pythagorean ratios)
of building materials, 3, 13, 61, 64, 89, 94, 95, 108, 156, 187, 219, 250, 260, 298
of cathedrals, 3, 9, 339 n. 22, 341 n. 20, 342 n. 9, 348 n. 7
of cinemas, 260
of circus tents, 349 n. 24
and Classical period music, 17, 214
of concert hall balconies, 217, 220, 250
of concert halls, 8, 13, 15–17, 217, 219, 225, 236, 251, 258–260, 262, 289–290, 294, 298, 300, 348 n. 7, 349 n. 20 (see also individual halls)
of domes, 94, 108, 112, 235
early experiments in, 243, 245
of glass palaces, 149, 152, 156
of the open air, 3, 8, 152, 259 (see also of outdoor music pavilions)
of opera house boxes, 73, 100, 101, 178, 192
of opera houses, 8, 13, 73, 80, 83, 88, 89, 94–95, 100, 104, 108, 115, 178–179, 289–290 (see also individual opera houses)
of outdoor music pavilions, 8, 259, 260, 294, 350 n. 29
of Protestant churches, 9
and relief decoration, 80, 88, 143, 250 (see also Sound diffusion)
and Romantic period music, 17, 159, 214
simulator, 350–351 n. 30
and social demands, 73, 100, 101, 104, 303, 304
and stage fright, 344 n. 1
of stage houses, 178
of theater balconies, 178
and twentieth-century music, 258–259, 271
variable, 16, 289–290, 294, 316, 349 n. 23 (see also Assisted resonance)
Adam, Robert, 21, 339 n. 16
Adelcrantz, Carl Fredrik, 75, 334
Adler, Dankmar, 236, 238, 239, 242. See also Adler and Sullivan
Adler and Sullivan, 238, 240–242, 243, 262, 300
Akron (Ohio), Edwin J. Thomas Hall, 290
Albano, Benedetto, 122, 124
Albert, Prince Consort of Great Britain, 122, 156
Aldeburgh Festival, 298
Index

Aleotti, Giovanni Battista, 8, 53, 73, 77, 78
Alexander III, tsar of Russia, 172
Alfieri, Benedetto, 80, 81
Algarotti, Conte Francesco, 83, 94
Amati, Nicola, 22
Amsterdam, Concertgebouw, 8, 17, 200, 214, 215–216, 218, 219, 286, 300, 330
Anacreontic Society (Dublin), 52
Anechoic chamber, 351 n. 31
Arne, Thomas, 48
Arup Associates, 178, 298, 299, 333
Assisted resonance, 16, 271, 289, 294, 344 n. 8, 350 n. 26, 350 n. 27, 350 n. 30
Aubertin, Granel, and Mathon, 262, 266–267
Auditoria, multiple-use, 15, 289. See also Acoustics, variable

Bach, Johann Sebastian, 9, 29, 57, 214, 349 n. 17
B-Minor Mass, 9, 140
Passions, 140
St. Matthew Passion, 9
Bach, John Christian, 29, 31, 32, 35
Bacon, Ernst, 257
Bad Kissingen, Assembly Rooms, 222
Bagenal, Hope, 3, 159, 271, 341 n. 11
Ballu, Théodore, 166
Banister, John, 26
Barberini family, 76
Barcelona, Palau de la Musica Catalana, 231
Barry, Edward Middleton, 122, 125, 165, 166, 335
Basel, Stadt-Casino, 219, 221, 330
Basile, Filippo, 172, 173
Baumann, L., 222
Bayreuth
Festspielhaus, plate 11, 8, 88, 115, 179, 186–187, 188–191, 192, 304, 335
Markgräflisches Opernhaus, plate 6, 86, 87, 88, 186, 334
Beazley, Samuel, 115
Beckford, William, 130
Beecham, Thomas, 159
Beethoven, Ludwig van, 64, 133, 140, 203, 214, 354 n. 17
Coriolanus Overture, op. 62, 247, 249

Missa Solemnis, 140
Symphony no. 3 (Eroica), 133, 258
Symphony no. 7, 65, 133
Symphony no. 9, 43, 133, 140
Bellini, Vincenzo, 100, 101
Belluschi, Pietro, 284
Bennett, Sir William Sterndale, 146
The May Queen, 146
Beranek, Leo L., 13, 286
Berio, Luciano, 315
Berlin
Deutsche Oper, 335
Grosses Schauspielhaus (Friedrichstadt-Palast), 193, 194
National Theater project (Gilly), 115, 116
Philharmonie (1888), 222, 224, 350
Schauspielhaus am Gendarmenmarkt, 65, 67, 115, 117, 133
Schauspielhaus am Gendarmenmarkt, 65, 67, 115, 117, 133
Schiller Theater, 193
Senderfreies Hall, 304
Singakademie (1812 project), 133, 134
Singakademie (1821) (Maxim Gorki Theater), 133, 135–137
Staatsoper, 86, 101, 105, 133, 334
Unten den Linden Theater, 175
Berlin Philharmonic Orchestra, 300
Berlioz, Hector, 16, 130, 132, 152, 156, 199, 209, 342 n. 4, 342 n. 6, 354 n. 13
Benvenuto Cellini, 122
Requiem, 156
Symphonie Fantastique, 129
Te Deum, 313
Berne, Kasino, 222
Bernini, Gian Lorenzo, 76, 77
Besançon, Theater (Ledoux), 112, 113–114
Bianchi, Pietro, 101
Birmingham (Alabama), Jefferson Civic Center, 290
Bizet, Georges, 171
Blondel, François, 89
Bloomington (Indiana), Indiana University Auditorium, 260
Boccioni, Umberto, 347 n. 1
Boethius, 337 n. 2
Bologna
  Teatro Communale, 13, 89, 93, 94, 341 n. 7
  Teatro Malvezzi, 89
Bolt, Beranek, and Newman, 286, 287, 290, 291–292, 294 n. 23, 350 n. 25, 350 n. 30
Bolton (Lancashire), Town Hall, 146
Bonn, Beethovenhalle, 308, 309, 333
Bonacci, Battista, 48
Bordeaux, Grand Théâtre, 104, 105–106
Boston
  Music Hall (1863), 250, 330
  Opera House (1909), 13
  Symphony Hall, 214, 219, 235, 243, 249–251, 252–253, 262, 286, 289, 331, 346 n. 10
  Boston Symphony Orchestra, 250
Botrel, 166
Boulez, Pierre, 316
  Poésie pour Pouvoir, 316
Boullée, Etienne-Louis, 109, 110–111
Brahms, Johannes, 152, 199, 209, 258, 259
  German Requiem, 140
Brandt, Karl, 186
Brant, Henry, 308
Bristol, Colston Hall, 332
Britten, Benjamin, 298
  War Requiem, 349 n. 17
Britton, Thomas, 27, 338 n. 9
Broadcasting studios, 315, 352 n. 3
Broderick, Cuthbert, 146, 147
Bruckner, Anton, 152, 342 n. 9
  Masses, 140
  Symphony no. 9, 141
  Te Deum, 140
Bruckwald, Otto, plate 11, 186, 188–191, 335
Brunel, Isambard Kingdom, 235
Brussels
  Maison du Peuple, 230, 231
  Palais des Beaux Arts, 231, 331
  Philips Pavilion (World Fair), 324, 326
Bucharest, Ateneul Român (Atheneum), 222
Budapest
  National Opera House, 172
  Vigado Concert Hall, 222
Buenos Aires, Teatro Gran Rex, 348 n. 12
Buffalo (New York), Kleinhaus Music Hall, 263, 331
Bülow, Hans von, 181
Burnacini, Ottavio, 83
Burney, Charles, 32, 49
Burnham, Daniel H., 243, 244, 331
Busoni, Ferruccio, 257, 348 n. 7
Buxton, Opera House, 178

Cady, Josiah C., 172, 174, 335
Cage, John, 325, 354 n. 16, 354 n. 17
  HPSCHD, 325, 327
  Musicircus, 325, 327
  Theater Piece, 353 n. 10
Cahill, Thaddeus, 313
Calgary (Alberta), Jubilee Auditorium, 332
Cambridge (Massachusetts)
  Fogg Art Museum (Hunt Hall), Harvard University, 235, 243, 246, 247, 248, 345 n. 1
  Sanders Theater, Harvard University, 247, 249
Caplin, Thomas, 52, 54, 329
Caracas, Aula Magna, 275, 332
Cardiff, St. David's Hall, 306
Caresale, Angelo, 96, 97, 106
Carlo-Emanuele III, King, 80
Carnegie, Andrew, 222
Carter, Edward J., 146, 342 n. 12
Caruso, Enrico, 271
Castellamonte, Conte di, 80, 81
Caudron, Rowlett and Scott, 290, 291–292, 333
Cavalli, Pietro Francesco, 77
  Scipione Africano, 77
Česky Krumlov, Castle Theater, 72
Chamberlin, Powell, and Bon, 276, 333, 337 n. 5
Charitable Music Society (Dublin), 52
Charles VI, Emperor, 86
Charpentier, Gustave, 171
Chavez, Carlos, 327
Chicago
  Arie Crown Theater, 275
  Auditorium, 236, 238–239, 240–242, 242–243, 300
  Central Music Hall, 236
  Grand Opera House, 236
Orchestra Hall, 225, 243, 244, 331
Stock Pavilion, 325
Temporary Opera House, Grant Park, 236
Chicago Symphony Orchestra, 239, 243
Chorin Monastery, 15
Christchurch (New Zealand), Town Hall, 306
Christina, queen of Sweden, 76, 77
Clark, Kenneth, 130
Clement IX, Pope, 77
Cleveland (Ohio), Severance Hall, 260
Cockerell, Charles Robert, 142, 143
Cole, Sir Henry, 157, 158
Colcutt, T. E., and Hollway, G. H., 175, 176
Collegia Musica, 57
Cologne, Gürzenich, 222

Concert halls. See also Acoustics of concert halls;
Auditoria, multiple-use; Tone, concert hall;
individual concert halls
amphitheater-shaped (see fan-shaped)
analogy with musical instruments, 219, 260
centralized, 22, 300, 303, 306, 345 n. 6
comparison with the phonograph, 251, 262, 263,
271, 275, 289, 294, 298, 308
directed-sound, 251, 262–263, 346 n. 10
elliptical, 53, 158, 215, 250
fan-shaped, 250, 276, 349 n. 20
heating and cooling in early, 28, 42, 52
horseshoe-shaped, 200
importance of narrow width in, 217, 251 (see also
Sound, lateral reflection of)
lighting of early, 32, 42, 43, 203, 208, 209, 214,
263, 294 (see also Opera houses, lighting of)
ratio of volume to seating area in, 286, 289,
339 n. 22
rectangular, 199–200, 205, 208, 209, 214, 217,
218, 219, 220, 222, 225, 250, 251, 262, 286, 306
reputation of, 13, 159, 200, 204
scale models of, 351 n. 31
semisound, 217, 306
shoe box (see rectangular)
sound (see centralized)
vineyard-stepped, 303, 304, 306
Concert of Ancient Music (London), 38, 40

Conservatorio concerts, 65
Cornelys, Theresa, 29, 32, 35
Crane, Kiebler, and Kellogg, 275
Cremer, Lothar, 17, 300, 304, 351 n. 31
Crépinet, A. M., 166
Cromwell, Oliver, 25
Croydon, Fairfield Hall, 275
Cubist painting, 320
Cunningham, John, 200, 202, 222, 330
Cuvilliés, François, 21, 72, 88, 89, 90–91, 334

Damrosch, Leopold, 222
Damrosch, Walter, 222
Dando, J. H. B., 43
Dart, Thurston, 8
Dauthe, Johann Carl Friedrich, plate 3, 62–63, 329
Debussy, Claude, 17, 324, 344 n. 2, 353 n. 11
Pelléas et Mélisande, 175, 230–231, 327
de Fleury, Charles Rouhaut, 166
Delannoy, François-Jacques, 65, 66
Denver (Colorado), Boettcher Hall, 306
Derham, William, 243
des Esseintes. See Huysmans, J. K.
Detroit, Henry and Edsel Ford Auditorium, 275
Diderot, Denis, 80
Dissonance, 257, 258, 259, 271, 347 n. 6, 348 n. 7,
348 n. 8
Donizetti, Gaetano, 100, 101
Dresden
Hoftheater (1841), 158, 180, 181
Opernhaus am Zwinger, 88
Opernhaus (1878), 181, 184–185
Palace Chapel, 4
Staatsoper, 95
Drottningholm Court Theater, 72, 75, 334
Dublin
Great Musick Hall, Fishamble Street, 49, 51, 52
Mr. Johnson’s Hall, Crew Street, 52
Duc, Louis, 166
Dummy head recording, 351 n. 31
Dumont, Gabriel Pierre Martin, 108, 109
Dvořák, Antonín, 152, 199, 225
Echo. See Acoustical echo

Edinburgh
Music Hall, 200
St. Cecilia’s Hall, 53, 54, 55, 329
St. Mary’s Cathedral, 313
Usher Hall, 225, 228, 313, 331
Edinburgh International Festival, 313
Edmonton (Alberta), Jubilee Auditorium, 332
Eisenhower, Dwight D., 284
Eisenstadt, Haydn-Saal, 39, 55–56, 57, 329 n. 23
Electronic music, 313, 315–316, 320, 324–325, 354 n. 17
Elgar, Sir Edward, 140, 159, 225, 345 n. 2
Elmes, Harvey Lonsdale, plate 9, 140, 141, 142, 143, 144–145
Enlightenment, 108
Environmental art, 325, 327, 354 n. 15
Erickson, Arthur, plate 14, 290, 295–297, 333
Erikkson, Nils Einer, 260, 331
Essen, opera house project (Aalto), 276, 278–279, 337 n. 5
Esterházy family, 55
Eszterháza Castle, 55, 58
Great Hall, 56–57, 329, 339 n. 23
marionette theater, 56, 72
musician’s house, 39, 56, 59
opera house, 56, 72, 74, 334
Eugene (Oregon), Hult Center for the Performing Arts, plate 15, 16, 294, 306, 307
Eugénie, Empress, 166, 168
Expressionism, 193, 300

Fellner, Ferdinand, and Helmer, Hermann, 175, 192, 222, 223, 331, 344 n. 14
Festival of Britain, 270
Feszel, Frigyes, 222
Film music, 343 n. 4. See also Music and cinema
Fire precautions and fire fighting, 95, 112, 172, 175, 192, 203, 230, 340 n. 31
Florence
Pitti Palace Theater, 73
Teatro Mediceo (Uffizi Palace), 73
Teatro della Pergola, 73
Fontana, Carlo, 8, 77, 78, 79, 80

Fonthill Abbey (Wiltshire), 130
Förster, Ludwig, 205, 208
Fowkes, Captain Francis, plate 10, 157–161, 330
Franz-Josef I, Kaiser, 171, 208
Frederick II, king of Prussia, 22, 86, 88, 101
French Revolution, 101, 108, 112
Fuller, Buckminster, 325, 354 n. 16
Furtwängler, Wilhelm, 348 n. 7
Futurism, 257

Gabriel, Ange-Jacques, 104, 107, 108
Gabrieli, Giovanni, 9
Galll-Bibiena family, 80, 83, 84, 88
Alessandro, 84, 86, 87, 101, 334
Antonio, 13, 64, 84, 86, 89, 93, 329
Carlo, plate 6, 75, 84, 87, 88
Ferdinando, 83, 84, 86, 89
Francesco, 64, 83, 84, 85, 88
Giovanni, 84, 86
Giuseppe, plate 6, 84, 86, 87, 88, 89, 186, 334
Gallini, Sir John, 35, 38
Galuppi, Baldassare, 65
Garnaud, A. M., 166
Garnier, Jean-Louis-Charles, plate 11, 165, 166, 168, 168–170, 172, 179, 187, 335
Geminiani, Francesco, 28
Geneva, Salle des Nations project (Le Corbusier), 262, 264–265
German, Sir Edward, 152
Gesellschaft der Musikfreunde (Vienna), 208, 345 n. 4
Giardini, Felice de, 28
Gilly, Friedrich, 112, 115, 116, 179
Ginain, P. R. L., 166
Glasgow, St. Andrew’s Hall, 219, 222, 330
Gluck, Christoph Willibald von, 72, 96, 120, 203
Il trionfo di Clizia, 89
Glyndebourne Festival Theatre, 72
Gothenburg, Konserthus, 260, 331
Gould, Glenn, 313
Gounod, Charles François, 171
Granada, Manuel de Falla Center, 306
Grazing incidence, 219, 304
Great Exhibition of 1851, 130, 149, 156. See also London, Crystal Palace
Grieg, Edvard, 209
Grimani family, 77
Gropius, Martin K. P., and Schmieder, Heinrich, plate 12, 209, 210–213, 218, 330
Grosses Konzert (Leipzig), 61
Guépière, Philippe de la, 89, 92
Guignard, Hector, 231
Gye, Frederick, 122

Haase, Johann Adolph, 88
Haas effect, 350 n. 29
Haiger, Ernst, 133, 138, 139, 140
Halle, Burgtheater, 175
Halle, Charles, 200
Halle Orchestra, 200
Hamburg
Konzerthaus auf dem Kamp, 57
Musikalle, 222
Musikalle (new), 16
Handel, George Frideric, 27, 28, 49, 52, 72, 120, 122, 214
Esther, 27
Israel in Egypt, 156
Messiah, 49, 52, 143, 156
Royal Fireworks Music, 43
Handel Commemoration Concert, 32, 343 n. 15.
See also Handel Festival
Handel Festival, 32, 152, 156
Hansen, Hans Christian, 205
Hansen, Theophil Ritter von, 205, 206–207, 208, 218, 330
Hapsburg family, 86
Harewood House (Yorkshire), 21
Harmony, rate of change of, 9, 258, 342 n. 9
Harris, Cyril M., 286, 287–288
Harris, Vincent, 146
Harrison, Wallace K., 284
Hasenauer, Karl von, 186
Haussmann, Baron, 166, 171, 208
Hawkins, John, 235
Haydn, Joseph, 9, 16, 17, 35, 38, 40, 55, 57, 64, 72, 203, 214, 339 n. 28
The Creation, 65, 143
La fedeltà premiata, 72
L’infedeltà delusa, 72
masses, 56
Le pescatrici, 72
The Seasons, 65, 143
Lo speziale, 72
String Quartets op. 71 and 74, 38
symphonies, 15, 56, 339 n. 23
Symphonies 6–8, 56
Symphonies 13, 31, 39, and 72, 56
Symphony no. 45 in F sharp minor (Farewell), 57
Symphony no. 57, 56, 57
Symphony no. 67, 56, 57
Symphonies 93–101 (London/Salomon), 35, 38, 56
Symphony no. 94 in G (Surprise), 35
Symphony no. 100 in G (Military), 38
Symphonies 102–104 (London/Salomon), 16, 40, 56
Heathcote-Stratham, H., 219, 220, 300
Helsinki
Finlandia Concert Hall, 276, 280–281
Kultuuritalo, 276, 277, 332
Henry, Joseph, 245
Henry, Pierre, 324
Henry Wood Promenade Concerts (London), 146, 230
Henschel, Sir George, 205
Herschel, William, 40, 339 n. 28
Hertzberger, Herman, plate 15, 304, 305, 306, 352 n. 37
Hickford, John, 28
Higginson, Henry L., 249, 250
Hill, W., and Potts, E., 146
Hiller, Adam, 61
Hofmannsthal, Hugo von, 193
Horta, Baron Victor, 230, 231, 331
Houston (Texas), Jesse H. Jones Hall for the Performing Arts, 16, 290, 291–292, 333
Hunt, Richard Morris, 246
Huysmans, J. K., 165
Illinois, University of, Assembly Hall, 325, 327
Initial time delay gap, 262. See also Sound reflection
Isacoustic curve, 236, 237, 238
Italian Radio, 315
Ives, Charles, 321
The Earth and the Firmament, or Universe Symphony, 324
Izenour, George C., 290, 291-292
Jeita (Lebanon). See Stockhausen, Stimmung
Jerusalem, Binyanei Ha’Oomah, 275
Joachim, Joseph, 203, 205
Johnson, Russell, 290, 293
Johnson and Burgee, 286, 287-288, 333
Johnson and Foster, 284
Jones, Owen, 203, 204
Jordan, Wilhem L., 282
Kauffmann, Angelica, plate 8, 21
King's Musick, The, 25
Kircher, Athanasius, 25, 26, 81, 235, 237
Klenze, Leo von, 133
Knightly, T. E., 205, 228-229, 230, 330
Knobelsdorff, Georg Wenzeslaus von, 86, 101, 105, 133, 334
Knudsen, Vern O., 294, 349 n. 20
Kosten, C. W., 298
Kreisler, Fritz, 271
Larchez, T., 245
Laloy, Louis, 327, 347 n. 5
Lamoureux, Charles, 250
Landon, H. C. Robbins, 40
Lasdun, Sir Denys, 351-352 n. 37
Lebensold, Affleck, Michaud, and Sise, 275, 332
le Brun, Napoleon E. H. C., 175, 335
Le Corbusier, 262, 264-265, 284, 324, 326
Ledoux, Claude-Nicholas, 112, 113-114
Leeds, Town Hall, 146, 147, 155
Leeds Music Festival, 146
Leipzig
Altes Gewandhaus, plate 3, 8, 17, 53, 57, 61, 62-63, 64, 200, 208, 209, 214, 329
Gewandhaus (concert hall), 306
Neues Gewandhaus, plate 12, 61, 200, 209, 210-213, 218, 250, 275, 330
Thomaskirche, plate 1, 9, 12, 57
Thomas-Schule, plate 1, 29
Three Swans Tavern, 61
Lennox (Massachusetts), Tanglewood Music Shed, 259
Leonardo da Vinci, 13, 14, 236, 337 n. 5
Licensing Act, repeal of, 120, 122
Liszt, Franz, 16, 43, 181
Christus, 140
Faust Symphony, 129
masses, 140
Littmann, Max, 8, 192-193, 193, 222
Littmann and Heilmann. See Littmann, Max
Liverpool
Mr. Lassell's Saloon, 200
Philharmonic Hall (1849), 155, 200, 202
Philharmonic Hall (1939), 263, 268-269, 331, 351 n. 32
St. George's Hall, plate 9, 140, 141, 142-143, 144-145, 146
Liverpool Music Festival, 140
Liverpool Philharmonic Society. See Royal Liverpool Philharmonic Society
Locke, Matthew, 9
Psyche, 120
London
Aeolian Hall, 203
Alexandra Palace, 149
Almack's Great Room, 32, 35, 39, 40
Argyll Rooms, 42, 42-43, 53
Barbican Arts Centre, 276, 306, 333, 337 n. 5
Bechstein Hall (see Wigmore Hall)
Carlisle House, Soho, 29, 30-31, 32, 35
Castle Tavern (Fleet Street), 27
Coliseum, 178
Crosby Hall, 43, 44-45
Crown and Anchor Tavern, 39, 40, 41
Crystal Palace, 32, 149, 150-151, 152, 153-155, 156, 181
Crystal Palace, theater for, 183
Dean Street Concert Room, 28
Dorset Garden Theatre, 120
Index

Exeter Hall, 155, 156, 200, 201, 203
Freemason’s Hall, 40
Hanover Square Rooms, 17, 35–40, 36, 39, 42, 43, 56, 155, 329, 339 n. 22, 339 n. 23
Hickford’s Rooms, 28, 329
Hippodrome (Talk of the Town), 178
King’s Theatre, Haymarket, plate 8, 28, 32, 35, 38, 71, 120, 121, 122, 123
King’s Theatre (Concert Room), 16, 39, 39, 40, 42, 43, 56, 65, 329 n. 23
Mitre Tavern (behind St. Paul’s), 25
Mitre Tavern (Wapping), 25
National Theatre, 351–352 n. 37
Palace Theatre (English Opera House, D’Oyly Carter’s Opera House), 175, 176
Pantheon, 32, 33–34, 35, 53, 130, 339 n. 16
Queen’s Hall, 159, 204, 205, 225, 228–229, 230, 263, 330, 345 n. 9, 349 n. 17
Ranelagh Garden, plate 2, 43, 49, 50
Royal Albert Hall, plate 10, 156–159, 159–161, 271, 300, 330
Royal Festival Hall, 16, 270–271, 272–275, 275, 294, 298, 300, 331, 341 n. 11, 350 n. 27
Royal Opera House, Covent Garden, 122, 124–125, 165, 172, 335
Sadler’s Wells, 49, 51. See also Medicinal wells, music at
St. James’s Hall, 155, 203–205, 204, 225, 230, 300
St. Margaret’s, Westminster, 9
St. Martin’s Hall, 43, 46–47, 155
St. Paul’s Cathedral, 11, 132, 270
Spring Garden concert room, 29
Spring Garden, Vauxhall (see Vauxhall Garden)
Steinway Hall, 203
Surrey Gardens concert hall, 146, 155
Theatre Royal, Drury Lane, 115, 120
Tottenham Street Rooms, 40, 41
20 St. James’s Square, 21
Vauxhall Gardens, 43, 48, 340 n. 33
Vendu, 27
Westminster Abbey, 9, 10, 32, 155
Wigmore Hall, 203
Willis’s Rooms (see Almack’s Great Room)
Yorke Buildings, 27

London County Council, 270, 331
London Symphony Orchestra, 159, 276
Los Angeles, Hollywood Bowl, 8, 259, 294
Louis, Victor, 104, 105–106
Louis XIV, king of France, 104
Louis XV, king of France, 104
Louis XVI, king of France, 104
Louis Philippe, king of France, 108
Ludwig II, king of Bavaria, 179–181, 186, 192
Lully, Jean-Baptiste, 86, 109, 327
Perseus, 104
Lyon, Gustave, 262–263, 266–267

McCunn, Hamish, 152
Mace, Thomas, 22, 24
McKim, Charles Follen, 250
McKim, Mead and White, 250, 252–253, 331
McLuhan, Marshall, 325, 354 n. 16
MacMahon, President, 168
Mahler, Gustav, 199, 259, 298
Manchester
Free Trade Hall (1856), 200
Free Trade Hall (1951), 332, 351 n. 32
Town Hall, 146, 148
Manelli, Francesco, L’Andromeda, 76
Mannheim, Kurfürstliche Oper, 86, 87, 101, 334
Mantua, Teatro Accademico (Scientifico), 89
Maria Casimira, queen of Poland, 76
Maria Theresa, Empress, 96
Marinetti, Filippo Tommaso, 346–347 n. 1
Martin, John, 132, 132, 342 n. 6
Martin, Sir Leslie, 270, 272–275, 331
Massenet, Jules Emile Frédéric, 171
Matcham, Frank, 178
Mathers and Haldenby, plate 14, 295–297
Matthew, Sir Robert, 270, 272–275, 331. See also
Robert Matthew, Johnson-Marshall and Partners
Matthews, H., 245
Mauro, Gaspare and Domenico, 86
Maximilian I, Elector, 86
Maximilian II Emmanuel, Elector, 86, 89
Maximilian III Joseph, Elector, 88
Medicinal wells, music at, 49
Medrano, Giovanni Antonio, 96, 97, 106
Melbourne, Victoria Arts Centre, 306
Mendelssohn, Felix, 43, 64, 199, 200, 208, 214
Elijah, 143, 146
First Walpurgis Night, 143
Meyer, Jürgen, 16, 35, 57
Meyerbeer, Giacomo, 203
Les Huguenots, 122
Le Prophète, 122
Milan
Studio di Fonologia Musicale, 315
Teatro Regio Ducale, 96
Teatro alla Scala, plate 7, 96, 98–99, 100, 172, 175, 335
Minneapolis, Orchestra Hall, 286
Monster concerts, 152
Montaner, Luis Domenechi, 231
Monteverdi, Claudio, Mercurio e Marte, 76
Morland, Sir Samuel, 25
Moscow, Tchaikovsky Hall, 222
Motta, Carini, 94
Mount Egcumbe, Earl of, 71
Mozart, Leopold, 22, 49, 89
Mozart, Wolfgang Amadeus, 9, 17, 28, 29, 30, 49, 64, 72–73, 83, 94, 96, 120, 203, 209, 214, 325, 327, 354 n. 17
Così fan tutte, 72
Don Giovanni, 72
Idomeneo, 72
Mitridate, rì di Ponto, 96
Le nozze di Figaro, 72
Seraglio, 72
Die Zauberflöte, 72, 94
Munich
Cuvilliés Theater. See Residenz-Theater
Glas Palast theater project, 181
Herkulesaal, 332
Künstlertheater, 193
Monumental Theater project, 179–181, 182, 192
Nymphenberg Castle, 21
Odeon, 133
Prinzregenten Theater, 192–193, 193
Residenz-Theater, 72, 88, 90–91, 334
Salvatorplatz opera house, 86
Tonhalle, 222
Music
and cinema, 327
and national character, 344 n. 2 (see also Nationalism in music)
and painting, 17, 72–73, 289, 320, 321, 342 n. 6
and war, 349 n. 17
Musical instruments
development of, 21–22 (see also Tone of musical instruments)
directionality of, 306
Musical Society of Edinburgh, 53
Musical Union Chamber Concerts (London), 300, 345 n. 6, 351 n. 33
Music of the spheres, 337 n. 2
Music societies, professional, 125. See also individual societies
Mylné, Sir Robert, 53, 54, 329
Naples. See also Conservatorio concerts
Teatro San Carlo, 96, 97, 101, 106
Napoleon Bonaparte, emperor of France, 101, 108
Napoleon III, emperor of France, 166, 168, 171, 208
Nash, John, 42, 42, 53, 122, 123
Nationalism in music, 140, 276. See also Music and national character
Neoclassicism, 108, 109, 112, 179
Neumann, Wilhelm, 186
New York
Carnegie Hall, 219, 222, 225, 226–227, 289, 330
Italian Opera House, 15
Lincoln Center for the Performing Arts, 225, 284
Avery Fisher Hall, 286, 287–288, 289, 333
Juilliard School of Music, 284
Metropolitan Opera House, 284
New York State Theater, 284
Philharmonic Hall, 286, 287
Vivian Beaumont Theater, 184
Metropolitan Opera House (1882), 8, 172, 174, 335, 349 n. 21
Music Pavilion (World’s Fair), 259
Radio City Music Hall, 349 n. 21
New York Philharmonic Orchestra, 225, 284, 286
Niccolini, Antonio, 96
Nietzsche, Friedrich, 186
Nikolaus I Esterházy, Prince, 56
Nikolaus II Esterházy, Prince, 56, 72
Nobile Società, 101
Noise, 257–258, 347 n. 5
   pink, 343 n. 2
   random, 351 n. 32
   traffic, 270
   white, 343 n. 2
Nolli, Giambattista, Plan of Rome, 83, 85
Nordwestdeutscher Rundfunk, 315
North, Roger, 21, 22, 25, 26, 27
Nottingham, Royal Concert Hall, 290, 293
Novosielski, Michael, plate 8, 40, 120, 121, 122, 329
Nüll, Eduard van der. See van der Nüll, Eduard

Odessa, Opera House, 344 n. 14
Opéra-Bouffe (Paris). See Théâtre Italien
Opera house boxes. See also Acoustics of opera house boxes
   social function of, 96, 100, 101, 104, 167, 178
   stepped (en escalier), 83, 85, 86
Opera houses. See also Acoustics of opera houses;
   individual opera houses
   amphitheater-shaped (see fan-shaped)
   architectural distinction from theaters, 71
   bell-shaped, 83, 88, 89
   fan-shaped, 115, 180, 187, 236, 304
   heating and ventilation of, 236, 239
   horseshoe-shaped, 77, 83, 96, 112, 115, 122, 171, 181, 193, 284
   introduction of cantilevered balconies in, 175, 178
      (see also Acoustics of theater balconies)
   lighting of, 88, 115, 122, 175, 187, 238, 239 (see also Concert halls, lighting of early)
   truncated circle-shaped, 104, 112, 115
   truncated ellipse-shaped, 77, 80, 81, 83, 101, 108, 109, 115
   U-shaped, 77, 88, 120
Orchestra galleries, 60
Orchestra pits, 95, 112, 115, 175, 187, 192
Osaka World Fair, West German Pavilion, 320, 322–323
Ott, Carlos, 284, 285

Ottmer, Carl Theodor, 133
Ove Arup and Partners, 282
Oxford, Holywell Music Room, 17, 52, 54, 329
Ozawa, Seiji, 286

Paderewski, Ignacy Jan, 225
Palermo, Teatro Massimo, 172, 173
Palladio, Andrea, 8, 77, 101
Paredes, José García de, 306
Paris
   Conservatoire Concert Hall, 65, 66
   Ecole des Beaux Arts, 108, 166, 250
   Eiffel Tower, 324
   Hall of Machinery (Exhibition of Industrial Products), 156, 157
   Humbert de Romans, 231
   IRCAM (Centre Georges Pompidou), plate 16, 16, 316, 317–319
   Notre Dame, 9
   Odéon, 112, 166
   Palais Royal Opera House, 109
   Place du Carousel opera house project, 109, 110–111, 112
   Place de la Bastille Opera House, 284, 285
   St. Denis, 3
   Salle Favart, 166
   Salle Feydeau, 165
   Salle Pleyel, 262–263, 266–267
   Salle Ventadour, 165, 166, 167
   Théâtre Franconi, 156
   Théâtre National de l’Opéra, plate 11, 165, 166, 168, 168–170, 171–172, 179, 180, 187, 276, 335
   Théâtre National de l’Opéra Comique, 177
   Théâtre des Nouveautés, 166
   Paris Conservatoire Concerts, 345 n. 4. See also Paris, Conservatoire Concert Hall
Parma
   Teatro Farnese, 8, 53, 73, 76, 77, 78
   Teatro Nuovo, 95
Parry, Sir Hubert, 152
Patte, Pierre, 80, 82, 95
Patti, Adelina, 238
Pavia, Teatro de’ Quattro Cavalieri (Teatro Fraschini), 89
Index

Paxton, Sir Joseph, 149, 150–151, 153–155, 156, 181, 235
Pepusch, John Christopher, 27, 49
Pepys, Samuel, 21, 26, 48
Peri, Jacopo
Dafne, 73
Euridice, 73
Peutz, V. M. A., 316
Peyre, Marie-Joseph, 112
Philadelphia, Academy of Music, 175, 335
Philharmonic Society. See Royal Philharmonic Society
Phipps, C. J., 230
Piano and Rogers, plate 16, 316, 317–319
Piermarini, Giuseppe, plate 7, 96, 98–99, 335
Pittsburgh, Carnegie Hall, 222
Pleasure gardens, music in, 43, 48–49 See also London; Paris
Pleasure palaces, music in. See London: Alexandra Palace, Crystal Palace, Surrey Gardens
Poelzig, Hans, 193, 194–195, 231
Polivka, O., and Balšánek, A., 231
Pompidou, President Georges, 316
Prague
Národní Divadlo (National Theater), 172, 174
Neues Deutsches Theater (Smetana Theater), 175
Smetana Hall, 231
Stavovské Divadlo (Tyl Theater), 72
Pratella, Balilla, 346 n. 1
Professional Concert (London), 35
Program music, 129, 353 n. 11
Prokofiev, Sergei, 343 n. 4
Proust, Marcel, 100
Purcell, Henry, 9, 203
The Fairy Queen, 120
Pythagorean ratios, 3, 6, 337 n. 2
Quartz, Johann Joachim, 22
Queen’s Hall Symphony Orchestra (London), 159
Radiodiffusion Française, 315
Rameau, Jean Philippe, 327
Raumlichkeit. See Spatial impression
Rayleigh, Lord, 13, 245
Reading, Hexagon Theatre, 294
Rechter and Karmi, 275, 332
Rechter, Zarhy, and Rechter, 275
Reid, D. B., 245
Reilly, Sir Charles, 143, 200
Reinhardt, Max, 193
Renton Howard Wood Levin Partnership, 290, 293
Repton, George, 122, 123
and development of harmony, 3
time, 9, 16, 17, 38, 40, 52, 55, 57, 64, 187, 208, 214, 217, 225, 247, 249–250, 251, 259, 289, 290, 294, 298, 316, 344 n. 2, 349 n. 23, 350 n. 27, 351 n. 31, 352 n. 32
variable (see Acoustics, variable)
Richter, Hans, 186, 200
Ries, Louis, 205
Rio de Janeiro, Opera House, 181
Ripple tank, 351 n. 31
Robert Matthew, Johnson-Marshall and Partners, 294
Rochester (New York), Eastman Theater, 260
Rockefeller, John D., 349 n. 21
Rock music, 320, 325
Romanticism in music and architecture, 65, 122, 130, 133, 159, 193, 199, 276
Rome
Teatro Aliberti, 83, 85
Teatro Argentina, plate 5, 80, 95, 101, 106
Teatro Barberini, 73, 76
Teatro dell’Opera, 178
Teatro Tordinona, 77, 78, 80
Ronald, Sir Landon, 159
Rossini, Gioacchino Antonio, 94, 100, 101, 120, 203
Semiramide, 122
Rotterdam, De Doelen Hall, 298, 306, 333
Rotterdam Philharmonic Orchestra, 298
Rowse, Herbert J., 263, 268–269, 331
Index

Royal Commissioners for the Great Exhibition of 1851, 156, 157
Royal Harmonic Institution (London), 42
Royal Liverpool Philharmonic Society, 200, 345 n. 4
Royal Philharmonic Society, 43, 159, 230, 345 n. 4
Russell, Charles Edward, 239
Russell, John Scott, 235, 237, 238, 239, 351 n. 31
Russolo, Luigi, 257

Saarinen, Eero, and Associates, 284
Saarinen, Eliel, 263, 331
Sachs, Edwin, 172, 175
Sacred Harmonic Society (London), 200
St. Augustine of Hippo, 337 n. 2
St. Petersburg, Court Opera House, 172, 173, 344 n. 14
Saint-Saëns, Camille, 171
Danse Macabre, 347 n. 5
Sala, George Augusta, 171
Salieri, Antonio, L’Europa riconosciuta, 96
Salomon, Johann Peter, 35, 38, 40
Salzburg
Mozarteum, 222
Neues Festspielhaus, 333, 335
Salzburg Festival Auditorium (Poelzig), 193, 195, 231
Salzburg Festival, 193
San Francisco, Davies Symphony Hall, 306
Santi, Francesco, 86
Sarro, Achille in Sciro, 96
Saunders, George, 71, 94, 95, 101, 115, 118–119
Sax, Adolphe, 354 n. 13
Scarlatti, Alessandro, 77
Scarlatti, Domenico, 76
Scene vedute per angolo, 83, 340 n. 5
Schaeffer, Pierre, 315
musique concrète, 257, 315
Scharoun, Hans, 300, 301–302, 303, 308, 333
Schinagl, Marx, 86
Schinkel, Karl Friedrich, 15, 65, 115, 133, 134–137, 140, 143, 179, 222
Schoenberg, Arnold, 257, 258, 354 n. 17
Schöffer, Nicolas, 324
Scholer, Walter, 260, 261, 331
Schroeter, Victor, 172, 173
Schubert, Franz, 199, 214
Rosamunde, 152
Symphony no. 9 in C, 152
Schulz, Josef, 172, 174
Schumann, Clara, 43, 350 n. 25
Schumann, Robert, 152, 199, 214
Schütz, Heinrich, 4
Schwechten, Franz, 222, 224, 330
Scott, Col. (Maj.-Gen.) H. Y. D., plate 10, 158, 159–161, 330
Scott, J. O., 146, 148
Seeking, Heinrich, 175
Selva, Giannantonio, 101, 102–103
Semper, Gottfried, 149, 156, 158, 172, 179–181, 182–185, 186, 192, 344 n. 14
Semper, Manfred, 181
Sfondrini, Achille, 175, 178
Shaw, George Bernard, 230
Shaw, Norman, 143
Sheffield, City Hall, 146, 342 n. 12
Sheffield Music Festival, 146
Sibelius, Jean, 276
Siccardsburg, August von. See van der Null and Siccardsburg
Sighizzi, Andrea, 83, 89
Sight lines, 13, 83, 94, 115, 175, 178, 179, 187, 236, 238–239
Simson, Otto von, 3
Smetana, Frederick, Libuse, 172
Smirke, Sir Robert, 124
Snaipe (Suffolk), Maltings Concert Hall, 298, 299, 333
Soane, Sir John, 142, 341 n. 20
Society of Gentlemen (London), 27
Sound. See also Acoustics
absorption, 95, 100, 152, 192, 217, 235, 247, 249, 260, 263, 289, 290, 294, 298, 316, 344 n. 1
absorption by audience, 8, 100, 217, 219, 225, 258, 286, 289, 298, 303, 304, 339 n. 22
Index

cue-ball reflection of, 217, 219, 220
diffusion, 159, 187, 192–193, 205, 286, 316, 349 n. 20, 350 n. 25 (see also Acoustics and relief decoration)
directional perception of, 251 (see also lateral reflection of)
focusing, 81, 115, 140, 205, 239 (see also Acoustics of domes)
insulation, 23, 27
kinship with vision, 165, 321, 325, 327, 343 n. 1, 343 n. 2 (see also Music and painting)
lateral reflection of, 17, 38, 55, 178, 193, 251, 258, 276, 298, 300, 303, 304
reflecting canopy, 159, 271, 286, 290, 298, 350 n. 25
reinforcement systems, 294 (see also Assisted resonance; Haas effect)
shadows, 250
velocity, 243, 262
Spatial impression, 15, 16, 40, 251, 276, 298, 338 n. 7
Spatial responsiveness, 338 n. 7 (see also Spatial impression)
Speaking statues, 25
Speer, Rudolf, 209
Spohr, Louis, 22, 43, 203, 214
Last Judgment, 143
Stainer, Jacob, 22
Stanford, Sir Charles Villiers, 152
Stendhal, 72
Stern, Isaac, 225, 344 n. 1
Stockdale Harrison and Sons, 225, 228, 331
Stockhausen, Karlheinz, 308, 313, 315, 316, 320–321, 324, 322–323, 352 n. 5
Gruppen, 333 n. 6
Kontakte, 316, 333 n. 10
music house design, 321
Musik für die Beethovenhalle, 308, 309
Musik für ein Haus, 320
Stimmung, 324–325
Tunnel Spiral, 322

Stöger, Michael, 72
Stokowski, Leopold, 275, 294, 308
Stone, Edward Durrell, 275
Stradivari, Antonio, 22
Strauss, A. M., 260
Strauss, Richard, 129, 193, 199
Stravinsky, Igor, 258, 259
Rite of Spring, 258
Stuttgart
Court Opera House, 89, 92
Liederhalle (Grosser Saal), 332
Liederhalle (Mozarthalle), 304
Staatstheater, 193
Sugden, Derek, 298, 299
Suger, Abbot, 3
Sullivan, Sir Arthur, 152
Sullivan, Louis, 236, 239
Super-realist painting, 289
Sydney, Opera House, plate 13, 282, 283, 284, 306

Tacca, Ferdinand, 73
Tartini, Giuseppe, 22
Taut, Bruno, 141
Tavern concerts. See Leipzig; London, for individual names
Tchaikovsky, Peter, 209, 225
Tel Aviv, Frederic R. Mann Auditorium, 275, 332
Telemann, Georg Philipp, 57
Telephone concerts, 313
Telstar, 313
Tennyson, Alfred, Lord, 152
Teodoli, Marchese, plate 5, 80, 106
Theater-in-the-round. See Concert halls, centralized
Théâtre Italien (Opéra-Bouffe) (Paris), 112, 166, 167
The Who, 325
Thiersch, Friedrich von, 222
Thomas, Theodore, 239, 242
Tone
of concert halls, 205, 214, 251, 259, 271, 286, 289, 290, 298, 351 n. 32
of musical instruments, 21–22, 347 n. 6
of orchestras, 187, 192, 199, 347 n. 6
Torelli, Giacomo, 77
Toronto
Massey Hall, 225, 330
Toronto Symphony Orchestra, 290, 294
Tron family, 76
Turin, Teatro Regio, 80, 81, 94, 95
Tuthill, William B., 225, 226–227, 330

Upjohn, C. F., 286
Utretch, Muziekcentrum Vredenburg, plate 15, 304, 305, 306
Utzon, Jørn, plate 13, 282, 283, 284

Vanbrugh, Sir John, 120, 341 n. 20
Vancouver, Queen Elizabeth Theatre, 275, 332
van der Nüll, Eduard, and Siccardsburg, August von, 171–172, 186, 335
Vanvitelli, Luigi, 96
Varèse, Edgard, 315–316, 324
Intégrales, 316
Poème électronique, 324
Vaughan Williams, Ralph, Symphonies 4 and 5, 349 n. 17

Venice
ospedali, plate 4, 65, 66
San Marco, 7, 9, 100
Teatro La Fenice, 101, 102–103, 172
Teatro Novissimo, 77
Teatro San Cassiano, 76
Teatro San Moise, 77
Teatro SS Giovanni e Paolo, 8, 77, 78
Verdi, Giuseppe, 100, 120
Requiem, 100
Rigoletto, 122
Il Trovatore, 122

Verona, Teatro Filarmonico, 83, 85, 86
Versailles, opera house, 104, 107, 108
Vicenza, Teatro Olimpico, 8, 77
Victoria, queen of England, 122, 146, 158, 161
Vienna. See also Gesellschaft der Musikfreunde
Burgtheater (Hofburg), 172, 186, 205
Burgtheater (Michaelerplatz), 72
Cortina opera house, 83

Freihauastheater, 72
Kaiserliches Theater, 88
Konzerthaus, 222
Musikvereinsgebäude, 205, 206, 208
Brahmsaal, 208
Grosser Musikvereinssaal, 17, 200, 205, 206–207, 208, 214, 218, 219, 275, 286, 330
Redoutensaal (Hofburg), 64, 64, 329
Rierplatz opera house, 83
Ringstrasse, 171, 184, 205
Spanish Riding School, 65
Staatsoper, 171–172, 186, 203, 335
Vienna Philharmonic Orchestra, 208
Villanueva, Carlos R., 275, 332
Vinuela, J. M., 306
Viollet-le-Duc, 130, 131, 166
Viotti, Giovanni Battista, 40
Vitruvius (Marcus Vitruvius Pollio), 235
Vivaldi, Antonio, 65, 83

Wagner, Cosima, 181, 186
Wagner, Richard, 8, 16, 43, 88, 165, 179–181, 186, 188, 192, 193, 209, 258, 327
ideas on theater design, 112, 133, 140, 179, 181, 187, 192
Parsifal, 327
Der Ring des Nibelungen, 165, 179, 186, 192
Siegfried’s Death, 179
stage sets of, 192
Wagner, Wieland, 192
Wagner, Wolfgang, 192
Wailly, Charles de, 112
Walpole, Horace, 32, 43, 108, 339 n. 16
Walter and Weeks, 260
Walters, Edward, 200
Walton, William, Portsmouth Point, 258
Washington, D.C., John F. Kennedy Center, 286
Waterhouse, Alfred, 146
Watson, F. R., 259, 260, 262
Weber, Carl Maria von, 43, 203, 214
Webern, Anton, 257, 346 n. 7
Weimar, Hoftheater, 193
Wellington (New Zealand), Michael Fowler Centre, 306
Weltzien, Victor von, 209
West Lafayette (Indiana), Edward C. Elliott Hall of Music, Purdue University, 260, 261, 331
Westmacott, R., 43, 46-47
Whispering galleries, 235
Wiesbaden, Assembly Rooms, 222
Wilhelmine, margravine of Bayreuth, 86, 88
Wood, Henry, 146, 159
Wren, Sir Christopher, 9, 120, 142
Wright, Lloyd, 294
Wyatt, Benjamin, 115, 120, 341 n. 19
Wyatt, James, 32, 33-34, 53, 130, 339 n. 16
Wyatt, Samuel, 32, 33-34

Xenakis, Iannis, 308, 324
   Metastaseis, 324
   Terretektorb, 308

Ybl, Miklós, 172

Zappa, Frank, 325
Zitek, Josef, 172, 174
Zürich, Grosse Tonhallesaal, 222, 223, 331