
Index

Note: Page numbers in bold italics refer to illustrations.

- Aarburg Bridge, 60–4, **61**, **62**, **63**, 73, 114, **115**, 193, 241
 Abegg family, 26
 Adler, Otto, 52
 Adler building, 52, **54**
 Alexandre, 186, 206, 223
 Allenbach Bridge, 169
 Altdorf granary, 157
 Altendorf Bridge, 237, 238, **239**
 Altwegg, A., 172
 Ammann, Dr. E., 194
 Ammann, Othmar, 9, 68, 129, **151**, 166
 bridges in the United States, 9, 129
 debt to Wilhelm Ritter, 9
 meeting with Maillart in 1930, 150, 151
 Amsteg power plant, *see* Ritom Lake power plant
 Andrae, Charles, 110
 applied science view, *see* design view of engineering
 arch dams, 113, 152
Art Nouveau, 117–18
 Association of Swiss with Financial Interests in Russia
 (SECRUSSE), 186
 Augst-Wyhlen dam bridge, 60, 63, 70
 Austrian Society of Engineers and Architects, 221
- Bach, Carl von, 104–5, 106, 273n40
 Baden-Wettingen Bridge competition, 112
 Barcelona cable factory, *see* Pirelli cable factory
 Barcelona power plant, 101
 Barth, Karl, 45
 Basel Art Museum, 215
 Basel conduit (siphon), 44–6, **46**, 74
 Basel lectures, by Maillart: (1904) 42; (1932) 211–12;
 (1937) 215, 216
 Basel Public Utilities Department, 44
Bauingenieur, Maillart's 1935 article in, 212–13
 Baur and Company, 226
 Bayonne Bridge (by O. Ammann), 150
 beam bridges, 196–200, 217, 227, 237
 at Altendorf, 237, 238
 at Augst-Wyhlen, 60, 63
 at Châtelard, 122–6
 at Gündlischwand, 217, 237
 at Hadlaub Street (Zurich), 17
 at Huttwil, 196, 199–200, 217, 237
 at Liesberg, 196–9, 217, 227
 in Peney design, 227–34,
 at Weissensteinstrasse (Bern), 229
 at Wyhlen, 60
 See also entries for each bridge
 Bender family, 86, 90
 Bern railroad bridge competition, 207–10, **208**, **209**
 Bernstein, 78, 79
 Bertelletti and Company, 228
 Bière-Apples-Morges rail line, 11–12
 Bill, Max, 123, 126, 142, 155
 criticism of Châtelard aqueduct leg, 123, 126
 recognition of Maillart as artist, 142, 155
 Billwil Bridge, 34–5, 35, 47, 88, 114, 170, 172, 188,
 200
 Binggeli, Albert, 170, 175, 183
 Bircher, Hans, 84, 86, 88, 92
 Blumer, Eduard (son-in-law of Robert Maillart), 135,
 149, 152, 159, 186, 187, 188, 201, 207, 223, 225,
 225, 243, 244, **244**
 Blumer, Marie-Claire (grand-daughter of Robert
 Maillart), 188, 223, **224**
 Blumer-Maillart, Marie-Claire (daughter of Robert
 Maillart), 43, 133, 149, 151, 152, 156, 163, 172,
 186, 187, 188, 201, 206, 211, **223**, **225**, 240, 243,
 244
 in Dutch East Indies (Indonesia), 135, 164
 in Geneva, 97, 99, 100
 marriage to Eduard Blumer, 135
 outward turn of her generation, 158
 recollection of mother, 72–3
 in Russia, 85, 87, 90, 92, 94, 95, 96
 special relationship to father, 98, 100, 134
 visits to bridges, 128, 132, 142, 188

- Blumer-Maillart, Marie-Claire (*cont.*)
 visit to Switzerland (1933), 186, 187–8, 196–7
 visit to Switzerland (1938), 223–4, 225–7
 “Bogenträger System Maillart,” *see* hollow-box patent
 Bohlbach Bridge, 155, 155, 175, 200
 Bohny, F., 178
 alternate designs for Schwandbach Bridge, 181
 Bonatz, Paul, 112, 215–16, 220–1
 Maillart’s criticism of, 215–16, 220–1
 Bösiger, W., 153, 202, 213, 217, 234
 Braillard, 202, 228
 Brest-Litovsk, Treaty of, 93
Bridge Aesthetics (1933; by H. Rukwied), 176
 Brusilov, General, 88, 92
 Büchi, Jakob, 108
 Bühler, Adolph, 134, 144–5, 153, 207, 210, 240, 243
 Burckhardt, Jacob, 6, 45
 Buss and Company, 57–8
- Candela, Felix, 40
 Caquot, A., 164, 165
 Carrard, Dr., 234
 Chancy-Pougny water tower, 157
 channel-beam problem, *see* shear-center controversy
 Château d’Oex, 238
 Châtelard aqueduct, 121, 122–6, 124, 125, 126, 128, 130, 132, 136, 138, 157
 Châtellerauld Bridge (by F. Hennebique), 16, 19, 31
 Chiasso shed roof, 116–21, 118, 119, 120, 138, 157, 189
 form dictated function, 117–19
 Clausius, Rudolf, 6
 code
 for reinforced concrete in Switzerland: (1903) 44, 74, 75; (1909) 44, 74–6, 166; (1935) 210, 211–12, 213, 214, 240
 for steel in Switzerland (1933), 189
 Collingwood, R. G., 137
 concrete, reinforced
 difference from stone and steel, 36–8
 fulfillment in Salginatobel Bridge, 136
 international congresses on, 162–5, 236
 lectures by Maillart on: (1909) 48–9; (1932) 211–12
 Liège congress paper, “Mass or Quality in Concrete Structures,” 150–1, 234
 Zurich Cement Hall, 234–6
 See also design view of engineering; Maillart, Robert: aesthetic ideas; code
 Coray, Richard, 140, 142
 Credit Suisse building, 150
 Cross, Hardy, 116, 182
 Culmann, Carl, 6–8, 7, 9, 10, 68, 77, 102, 130, 225
 Cuno, Wilhelm, 99
- Daetwyler, 150
 d’Anchamps Bridge (by C. Rabut), 200
 deck-stiffened arch, 114–16, 119–20, 142, 158, 203, 234, 240, 241
 in Flienglibach Bridge, 114–16
 German and Swiss criticism, 176–7
 Maillart’s defense, 178
 in Schrähbach Bridge, 116
 in Töss Bridge, 167–9
 in Valtschielbach Bridge, 121–2
 See also deck-stiffened arch with horizontal curvature; deck-stiffened polygonal arch; deck-stiffened skewed arch
 deck-stiffened arch with horizontal curvature, 138, 142
 in Bohlbach Bridge, 155
 in Klosters Bridge, 146–9
 in Schwandbach Bridge, 174–82
 deck-stiffened polygonal arch, 176
 in Klosters Bridge, 146–9
 in Schwandbach Bridge, 176
 deck-stiffened skewed arch, 154
 in Spital Bridge, 154
 design view of engineering, vs. applied science view, 1–2, 19–20, 32–3, 40–1, 48–9, 74, 76–7, 116, 181–2, 210–15
 aesthetic choice integral to form, 37–8, 103–4, 118–19, 215–16, 219–21. *See also* Maillart, Robert: aesthetic ideas
 in code debates: (1909) 44, 74–6; (1935) 211–12
 debt to Carl Culmann and Wilhelm Ritter, 6–10
 defined, 1–2
 as discipline and play, 5, 131–2
 as economy and lightness, 30, 52, 62, 150–1
 in flat slab, 50–1, 165
 in Maillart’s later bridges, 178–82, 203
 interactive view of structure, 31
 opposed to separation of design from construction, 54–5, 74, 104
 presented by Maillart at international congresses, 163–5
 in shear-center controversy, 105–7
 in Sihlhölzli gymnasium controversy, 189–96
 summation, 240–1
 Dick, Wilhelm, 12
 Douglas, Donald, 19
 Dyckerhoff and Widmann, 101
- E. G. Portland Cement Hall, *see* Zurich Cement Hall
 E. G. Portland Cement roadway study, 219
 Eggenschwyler, Adolph, 106, 107
 Eiffel, Gustave, 13
 Eigenheer, Ernst, 86, 88

- Elskes, Eduard, 15, 21–2, 74–5
 EMPA, *see* Federal Institute for Materials Testing
 Emperger, Fritz von, 11, 40, 41, 43, 65, 66, 134, 162, 211, 241
 Engeried Clinic, 160, 161
 Engesser, Franz, 9, 75, 215
 applied science view opposed to Wilhelm Ritter's design view, 9, 75
 ETH, *see* Federal Institute of Technology

 Favre and Company, 54
 Federal Foundation for National Economy, 177–8
 Federal Institute for Materials Testing (EMPA), 15, 130, 150, 201
 Federal Institute of Technology (ETH), 6–10, 7, 68, 74, 102, 106, 110, 112, 116, 150, 151, 156, 162, 189, 214, 225, 234
 applied science view taught by Max Ritter, 76–7; and Arthur Rohn, 102–112
 design view of Carl Culmann and Wilhelm Ritter, 6–10
 Maillart's education at the ETH, 6, 10
 Maillart's ETH lectures (1911–14), 76–7
 Federal Materials Testing laboratory, *see* Federal Institute for Materials Testing
 Federal Polytechnical Institute, *see* Federal Institute of Technology
 Felsegg Bridge, 170–4, 173, 174, 184, 200, 207, 219
 Fischer, Ulrich, 219
 flat slab, 49–52, 50, 101, 104, 116, 151, 157, 162, 165, 219, 240
 anticipated in Wädenswil factory, 48, 50
 in Pirelli cable factory, 52, 81
 in Rorschach filter building, 51–2, 53
 success in Spain and Russia, 52
 use of different shape in United States, 51
 in Zurich warehouse, 48, 50–1, 51
 flat-slab patent (1909), 50, 51
 Flienglibach Bridge, 114–16, 115, 117, 130, 136, 146, 181
 first deck-stiffened arch in, 114
 Fornerod, Marcel, 152, 153, 172, 178, 182
 Freyssinet, Eugène, 131, 156, 164, 165, 166, 185, 200, 203, 217, 241
 design of Plougastel Bridge, 164, 165, 185–6
 Froté and Westermann, 14, 15, 17, 26, 28, 36, 42, 44
 funicular-truss roof, *see* Chiasso shed roof

 Gadmen (Gadmerwasser) Bridge, 228
 Gampert, F., 228
 Garstatt Bridge, 236–7. *See also* hollow-box design
 Gaudi, Antonio, 117–18

 Geneva brochure (1920), 101, 102
 George Washington Bridge (by O. Ammann), 129, 150
 Germany, 8, 240, 241
 analytical view of Melan and Mörsch, 40–1
 German imitation of Maillart's hollow box, 219–20
 Maillart's criticism of German methods, 48–9
 Maillart's criticism of Hitler's *autobahn* bridges, 215–16, 220–1
 Giacometti, Alberto, 42
 Giedion, Sigfried, 131, 151, 158, 201, 218, 225
 helped draw attention of Modern movement to Maillart's works, 156, 158
 Giubiasco Bridge, 166–7, 167, 182, 186
 Grand Fey viaduct, 121, 126–9, 127, 128, 129, 132, 138
 Grand Hotel Dolder, 151
Graphic Statics (1866; by C. Culmann), 8
 Graubünden, 17, 42, 132, 136, 142, 146, 234
 openness to design innovation, 42
 Gribi, 62, 63
 Grimsel hydroelectric works, 135
 Gotthard Hotel, 135
 Gotthard rail line, 107, 118
 Gubelmann, Hermann, 78
 Gündlischwand Bridge, 217, 218, 237
 Guggersbach Bridge design, 58, 74, 131, 259n13
 Gull, Gustave, 14, 56, 58

 Hadlaub Street Bridge (Zurich), 17
 Hässig, Viktor, 97
Handbook for Reinforced Concrete Design (Handbuch für Eisenbetonbau by F. von Emperger), 41, 43
 Heene, W., 52
 Hefti, J., 193
 Heim, Professor Albert, 67, 109
 Hellgate Bridge (by G. Lindenthal), 129
 Hemingway, Ernest, 157
 Hennebique, François, 10, 17, 19, 31, 34, 37, 70, 101, 212
 Châtellerauld Bridge, 16, 19, 31
 floor system, 47, 48, 49–50
 Maillart's debt to Hennebique, 14–16
 Maillart's improvement to floor system in flat slab, 47–8, 50–51. *See also* flat slab
 Herter, Hermann, 192, 193, 216
 Hilgard, Karl, 225
 Hindenburg, General (later German President) Paul von, 85, 92, 186
 Hitler, Adolf, 152, 186, 206, 210, 215, 220, 234
 Maillart's initial view of, 152
 Hofacker, Karl, 177–8
 hollow-box design, 17–18, 28, 36, 104, 240
 in Billwil Bridge, 35

- hollow-box design (*cont.*)
 in Châtelard Bridge, 122–3
 in Felsegg Bridge, 174
 in Garstatt Bridge, 236–7
 in Lachen Bridge, 237–8
 in Muota (Ibach) Bridge, 77–8
 in Peney Bridge design, 227–8
 in Pérolles Bridge design, 64–5
 in Plougastel Bridge (Freyssinet), 164
 in Quai Turrettini, 219
 in Rossgraben Bridge, 170
 in Salginatobel Bridge, 136–40
 in Sirakovo Viaduct, 184
 in Tavanasa Bridge, 38–9
 in Zuoz Bridge, 17–18, 19, 142
- hollow-box patent (1902), 28, 28, 34, 114–16
 claimed by Maillart's former employer in 1903, 36
- Homo Ludens* (1938; by J. Huizinga), 5
- Huber, Albert, 113, 150
- Huizinga, Johan, 5, 206
- Humbert, Marcel, 150
- Huttwil Bridge, 196, 196, 199–200, 217, 237
- Industrial Society of Cement Manufacturers, 42
- Innertkirchen Bridge, 183–4
- International Association for Bridge and Structural Engineering: First Congress, Paris (1932), 165–6; Second Congress, Berlin and Munich (1936), 210; plans for Third Congress, Warsaw, 236
- International Congress for Bridge and Structural Engineering: Zurich (1926), 162; Vienna (1928), 163–4
- International Congress for Concrete and Reinforced Concrete, Liège (1930), 164–5
- International Congress for Testing Materials, Amsterdam (1927), 162
- International Congress on Building Materials, Copenhagen (1909), 70
- International Economic Conference, London (1930), 187
- Isar Bridge (by E. Mörsch), 40, 40
- Isler, Heinz, 40
- Jaeger and Company, 35, 46, 54, 58, 62, 63, 64, 65, 74
- Jaeger and Lusser, 111
- Jegher, August, 108, 131
- Jegher, Carl, 67, 100, 132, 134, 136, 182, 214, 220, 225, 240, 243
 invited Maillart to criticize proposed code for reinforced concrete, 211
 recognized Salginatobel Bridge as work of art, 142
 succeeded father as editor of *Schweizerische Bauzeitung*, 130–1
 supported Maillart in Zähringer competition, 111;
 in later competitions, 207; in Sihlhölzli gymnasium controversy, 193–4
- Jegher, Werner, 176–7
- Jenny-Dürst, Professor Hans, 201
- Joss and Klauser, 56, 66
- juried design competitions in Switzerland, 41, 56
 influence of academic authorities against Maillart, 111–12, 207–10
 for Laufenburg Bridge, 58–60
 for Lorraine Bridge (1911), 66–7, 131, 262n52
 for Pérolles Bridge, 64–5, 66
 for Rheinfelden Bridge, 56–8
 for Uto Bridge, 41
- Kahn, Louis, 37
- Kamenskaya steel mill, 88
- Karlsruhe Polytechnic Institute, 7
- Kastli, O. E., 159, 160
- Keller, Alois, 134, 152–3, 182, 200, 202
- Kellogg-Briand Pact, 132
- Kerensky, Alexander, 93
- Kharkov (General Electric) factory, 86, 87, 89
- Kilchmann, L., 32–3
- Killer, Josef, 189, 192, 193
- Kitts, George, 90, 160
- Klauser, 134
- Kloster-Küblis power plant, *see* Ritom Lake power plant
- Klosters Bridge, 142, 146–9, 148, 149, 151, 153, 155, 157, 165, 166, 175, 225
- Kornilov, General, 93
- Kruck, Gustave, 152
- Kruck, Hans, 151–2, 155, 156, 158, 182, 200
- Lachen Bridge, 237, 237, 238, 238
- Laifour Bridge (by C. Rabut), 200
- Landquart Bridge, *see* Klosters Bridge
- Lardy, Pierre, 116, 183
- Laufenburg Bridge, 58–60, 59, 61, 61, 63, 64, 66, 70, 164
- Lausanne engineering school, 183
- Laval, Pierre, 206
- League of Nations, 161
 Geneva building, 236
- Le Corbusier, 37, 103, 158
 misunderstanding of aesthetic potential of concrete, 37, 103
- Lehr, Karl (Charles), 72, 88, 93
- Leipheim Bridge (Germany), 19, 216, 220, 234, 236
 architecturalism of Bonatz at, 216
 imitation of Maillart's hollow box in, 219
 Maillart's criticism, 220–1
- Lenin, V. I., 93

- Leuzinger, H., 234
- Liesberg Bridge, 184, 196–9, 197, 198, 216, 217, 227, 228
- Lindenthal, Gustav, 129
- Lorraine bridge: (1911 competition) 66–7, 112, 131, 262n52; (1930 bridge) 134, 142–6, 145, 150, 153, 156–7, 170, 207
- Losinger, Eugen, 134, 170, 175, 176, 182, 183
- Ludendorff, General Erich von, 84, 85
- Magic Mountain, The* (1924; by Thomas Mann), 42
- Maillart, Adrienne (daughter of Alfred Maillart), 186
- Maillart, Alfred (brother of Robert Maillart), 11, 100, 158, 234
- Maillart, Bertha (Küpfer) (mother of Robert Maillart), 3, 4, 4, 26, 34, 96, 97, 158, 160, 186
- Maillart, Edmond (father of Robert Maillart), 3, 4
- Maillart, Edmond (son of Robert Maillart), 34, 43, 69, 85, 86, 91–2, 96, 98, 100, 132, 135, 158–9, 160, 164, 187, 218, 219, 224, 236, 244
- demands of father, 91–2
- success of, 158–9
- Maillart, Ella (daughter of Paul Maillart), 158, 159
- Maillart, Hector (cousin of Robert Maillart), 99
- Maillart, Jean Colley dit (ancestor of Robert Maillart), 4
- Maillart, Marcelle (daughter of Alfred Maillart), 160
- Maillart, Maria (Ronconi) (wife of Robert Maillart), 20–5, 23, 26, 34, 36, 43, 66, 69, 70–3, 78, 79, 85, 92, 99, 136, 186, 188, 214
- courtship and marriage, 20–5
- illness and death, 90–1
- in Russia, 88–90
- life in prewar Zurich, 22, 36, 69, 72–3
- Maillart, Marie (wife of Paul Maillart), 96, 97, 98, 186, 187
- Maillart, Marie-Claire, *see* Blumer-Maillart, Marie-Claire
- Maillart, Maximilian (brother of Robert Maillart), 3, 11, 158
- Maillart, Paul (brother of Robert Maillart) 4, 92, 96, 97, 158, 187, 205
- Maillart, René (son of Robert Maillart), 70, 85, 90, 92, 93, 94, 95, 96, 132, 135, 165, 187, 244
- Maillart, Robert
- academic authorities, conflict with, 44, 150–1, 210–15; and Max Ritter, 76–7, 177–82, 189–96; and Arthur Rohn, 102–12; and François Schüle, 32–3, 74–5. *See also* Ritter, Max; Rohn, Arthur; Schüle, François
- aesthetic ideas, 10, 56, 60, 103–4, 150–1, 164, 216; in bridges, 17, 30–1, 39, 121–2, 142, 143, 147–9, 166–7, 178, 215–16, 220–1, 236; in flat-slab buildings, 50–1; nineteenth and twentieth centuries compared, 13–14, 36–8
- architects and architecture, 6–7, 34, 41, 150, 158; appointed to Architects Group, 228; architects and politics, 6–7, 34; architecture vs. structure, 137–8; Maillart's opposition to “architectonic” forms, 216; traditional vs. modern materials, 36–8; Zurich lecture to architects (1935), 201–2
- bridge designs of, *see* Guggersbach, Peney, Péroilles, Sitter, Uto bridge designs
- bridges, *see* Aarburg, Altendorf, Augst-Wyhlen, Billwil, Bohlbach, Châtelard, Felsegg, Flienglibach, Garstatt, Giubasco, Grand Fey, Gündlischwand, Hadlaub, Huttwil, Innertkirchen, Klosters, Lachen, Laufenburg, Liesburg, Lorraine, Marignier, Rheinfelden, Rossgraben, Salginatobel, Schrähbach, Schwandbach, Sirakovo, Stauffacher, Steinach, Tavanasa, Töss, Traubach, Trebsenbach, Valtshielbach, Vessy, Veyron, Wangen, Wattwil, Weissensteinstrasse, Wyhlen, Zigggenbach, and Zuoz bridges
- buildings, *see* Altdorf granary depot; Barcelona power plant; Chiasso shed roof; Credit Suisse building; Kamenskaya steel mill; Kharkov factory; Pirelli cable factory; Rentsch building; Riga factory; Rorschach filter building; St. Gallen Concert Hall; Sihlhölzli gymnasium; Swiss Credit Bank building; Swiss National Bank building; Wädenswil factory; Zurich Amtshaus; Zurich Cement Hall; Zurich Opera warehouse; Zurich University buildings; Zurich warehouse
- and the code for reinforced concrete in Switzerland: (1903) 44, 74, 75; (1909) 44, 74–6, 166; (1935) 210, 211–12, 213, 214, 240
- construction ideas: at Liesberg, 197; opposed separation of design from construction, 54–5, 74; at Zuoz, 18, 248n58
- consulting work, “inspector of failed works,” 206–7
- criticism, by Zurich Alumni Association of the ETH, 212–13. *See also* Maillart, Robert: academic authorities
- design ideas, *see* deck-stiffened arch; design view; flat slab; hollow-box design; shear-center controversy; three-hinged arch
- design view, *see* design view of engineering
- early life, 3–6
- education at Federal Polytechnical Institute (ETH), 6–10
- family and home: from 1902–14, 26–7, 43, 69–70, 72–3; from 1919–40, 97–8, 132–3, 157–8, 187–8; in Russia (1914–19), 84–96. *See also* Blumer, Eduard (son-in law); Blumer, Marie-Claire (granddaughter); Blumer-Maillart, Marie-Claire

- Maillart, Robert (*cont.*)
 (daughter); Maillart, Adrienne (niece); Maillart, Alfred (brother); Maillart, Bertha (mother); Maillart, Edmond (father); Maillart, Edmond (son); Maillart, Ella (niece); Maillart, Marie (sister-in-law); Maillart, Maximilian (brother); Maillart, Paul (brother); Maillart, René (son); Wicky, Arnold (brother-in-law); Wicky, Edith (niece); Wicky, Marguerite (niece); Wicky, Rosa (sister)
 health, 159–60, 217, 238–40; death, 243–4
 international recognition: in Britain, 156–7; elected to Royal Institute of British Architects, 217; in France, 156, 158; and Modern movement, 2, 151–2, 156–8; in United States, 158, 224–5. *See also* Bill, Max; Giedion, Sigfried; Shand, P. Morton
 other works, *see* Basel conduit; Chancy-Pougny water tower; Quai Turrettini; rivet design; St. Gallen gas tanks; Stolzühle tunnel; Tiefencastel avalanche structure; Vevey Quai
 patents, *see* flat-slab patent; hollow-box patent; patents of Robert Maillart
 personality, 25, 26–7, 34; as discipline and play, 5–6, 131–2; close control of company, 34; enjoyed solitude in early career, 71–2; loneliness of later life, 132–3, 217–18; sense of whimsy, 73, 88–9
 political views: failure to anticipate Russian Revolution, 93; of Hitler and Third Reich, 152, 186; lack of interest in politics, 34, 108
 in Russia: family and death of Maria, 88–91; lost fortune and escape, 92–6; prewar visits, 77–8, 79–83; work in wartime Russia, 84–8
 social life and recreation, 133, 134, 186
- Maillart and Company
 Barcelona office, 80, 97–8, 113, 118
 Bern office, 113, 134, 150, 153, 218
 founding in Zurich (1902), 26
 Geneva office, 97, 99, 134, 140, 150, 153, 172, 174, 182, 217, 218, 225, 226
 later business difficulties, 97–8, 100–1, 182–3, 206–7
 need for Maillart's close management, 34, 64, 69–70
 partners, *see* von Müller, Max; Zarn, Adolph
 in Russia, 77–82, 84, 85–8, 92–3
 St. Gallen office, 47
 Zurich office: (prewar) 33–4, 43, 46, 54, 62–3, 70, 71; (postwar) 134, 136, 150, 152, 172, 174, 182, 202, 217, 218, 238
- Mann, Thomas, 42
 Mantel, Gustav, 67
 Marignier Bridge, 101, 102, 114, 115, 116
 “Mass or Quality in Concrete Structures,” 150–1, 234
 Meisser, Lucien, 132, 150, 244
 Melan, Josef, 19, 40, 56, 67
 Menn, Christian, 40, 116
 Menn, Simon (father of Christian Menn), 132, 134, 202
 Mesnager, A., 151
 Meyer, Peter, 131
 Miescher, Paul, 44, 45–6
 Modern movement, 2, 131, 151–2, 156–8
 Moltke, General von, 84
 Monier, Joseph, 10
 Moravian School for Girls, 100
 Mörsch, Emil, 38, 40, 41, 74, 75, 76, 102, 106, 220
 Isar Bridge of, 38, 40, 40
 opposed by Maillart in 1906 code debate, 74–6
 Moser, Arnold, 79, 219
 Moser, Robert, 13, 14, 64, 68, 102, 111, 240
 influence in bridge competitions: Laufenburg, 58, 59; Lorraine (1911), 66–7
 stood for stone masonry tradition, 13, 64, 67–8
 Müller, Max von, 22, 26, 27, 28, 36, 42, 69, 73, 79, 81, 86–7, 88, 98, 99, 133
 Münch, Max, 62
 Muota River (Ibach) Bridge, 78–9
 Mussolini, Benito, 187, 206, 210, 234
- National Socialist Bund for German Technology, 221
 Nelson, Paul, 158
 Newmark, Nathan, 116, 203
 Nissen, Paul, 81, 99, 100, 132, 134, 160, 186, 216, 223, 240, 244
 Nötzli, Fred, 129
 Nydegger Bridge (1844), 166
- Oechslin, Mlle., 134, 186, 216, 223
- Paris, Professor A., 211, 228
 Paris World's Fair: (1900) 17; (1937) 144
 patents of Robert Maillart
 flat-slab (1909), 50, 51
 hollow-box (1902), 28, 28, 34, 114–16; claimed by Maillart's former employer in 1903, 36
 other patents, 152
 Peney Bridge design, 227–34, 228, 229, 230–1, 232–3, 237
 Perkins, Maxwell, 157
 Péroles Bridge design, 64–5, 64, 65, 66, 70, 111, 112
 Perronet, Jean Rodolphe, 212
 Perrot, Simone, 186, 188
 Person, Benjamin, 78, 81
 Pesson, Robert, 183
 Pfeiffer, Walther, 167
 Pflughard, Otto, 76
 Pflughard and Haefeli, 42
 Pirelli cable factory, 52, 80, 80
 Pirelli Company, 52

- Plougastel Bridge (by E. Freyssinet), 164–5, 185, 186, 212
 Prader, Florian, 132, 134, 136, 139, 146, 234, 237
 Prader and Company, 238
 pressurized tunnels, *see* Ritom Lake power plant
 provisional code, *see* code, for reinforced concrete in Switzerland (1903)
 Pümpin and Herzog, 11–12, 14, 15
- Quai Turrettini, 201, 217, 219. *See also* hollow-box design
 Queen Alexandra sanatorium, 42, 43
- Rabut, Charles, 200
 Read, Herbert, 158
 Reber, Armin, 134
Reichsautobahn, 215, 216, 219–20, 221, 229
Reichstag building, 236
 contrast of Hitler's building with Maillart's Zurich Cement Hall, 236
 reinforced concrete, 36–8, 48–9, 103–4, 150–1
 difference from stone and steel, 38–9
 Maillart described as the “acrobat of reinforced concrete,” 183
 See also code, for reinforced concrete in Switzerland
 Reissner, E., 107
 Rentch Company and building, 113
 “Revoluzger,” card game invented by Robert Maillart in Russia, 134
 Rhätische Bahn, 17, 35, 42–3, 146
 Rheinfelden Bridge, 56–8, 57, 66, 70, 78
 Riga factory, 80–1, 81, 101
 Ritom Lake power plant
 failure of pressurized tunnels, 107–8
 Maillart's solution, 108; adopted at Amsteg, 108
 Maillart's solution to Kloster-Küblis problem, 108–9, 109
 Rohn commission criticized, 108, 131
 Ritter, Max, 102, 107, 169, 183, 210, 212, 240, 243
 applied science view of, 76–7, 177–8, 181–2, 186–7
 controlled teaching at the ETH after Rohn, 116
 and debate over 1935 code, 211–12, 213
 lectures contrasted with Maillart's, 76–7, 76
 and Sihlhölzli gymnasium controversy, 189–96
 used influence against Maillart, 207
 Ritter, Wilhelm, 8–9, 9, 13–5, 17, 18, 22, 28, 29, 31, 32, 35, 40, 60, 68, 74, 75, 76, 77, 102
 design view of, 9–10, 213
 rivet design, Maillart's, 110–11, 111
Robert Maillart (1949; by Max Bill), 155
 Rochemolles dam competition, 113
 Roebling, John, 8
 Rohn, Arthur, 103, 109, 121, 130, 131, 134, 153, 201, 210, 236, 240
 applied science view of, 102–5, 110, 111
 control of instruction at the ETH, 106, 112
 Maillart's criticism of: 102–5, 113; in Ritom Lake investigation, 107–10; in rivet design, 110–11; in shear-center controversy, 105–7
 role in organizing international congresses, 162, 163, 164, 165, 166
 and Zähringer Bridge competition, 111–12
 Rorschach filter building, 51–2, 53
 Ros, Mirko, 106, 116, 130, 131, 134, 136, 140, 142, 146, 150, 162, 163, 177, 181, 198, 203, 214, 240, 241–2, 243, 244
 Rossgraben Bridge, 169–70, 170, 171, 172, 172, 174, 175, 183, 184, 200
 Roth, Alfred, 202
 Rothpletz, Ferdinand, 108
 Royal Dutch Shell, 135, 159
 Royal Institute of British Architects, 217
 election of Maillart as honorary member, 217
 Rukwied, Hermann, 176
 attacked Maillart's bridge aesthetics, 176–7
 Ruskin, John, 157
- Sacher Hotel, 163
 St. Gallen Concert Hall, 47–8, 49
 St. Gallen gas tanks, 28–31, 29, 30, 101, 152
 St. Paul's Cathedral (London), 236
 St. Petersburg warehouse, 78, 79
 Salginatobel Bridge, 121, 131, 136–44, 140, 141, 143, 147, 152, 153, 157, 165, 166, 169, 170, 174, 184, 200, 207, 227, 243
 designated an International Historic Civil Engineering landmark (1991), 144
 design of, 136–40
 last visit of Maillart, 225–6
 and Lorraine Bridge (1930), 142–4
 at Paris World's Fair (1937), 144
 recognized as work of art, 142
 scaffolding, *see* Maillart, Robert: construction ideas
 Schäfer, 62, 63
 Schaffhausen Bridge competition, 200
 Schatzalp sanatorium, 42
 Schiers, 136, 140
 Schneider, 81
 Schrähbach Bridge, 116, 117, 130, 136
 Schucan, Achilles, 35
 Schuders, 136, 142, 144
 Schüle, François, 15, 29, 54, 59, 64, 66, 75, 76, 102, 104, 130, 166, 240
 applied science view of, 32, 75
 and code debate (1909), 74–5
 in Steinach Bridge competition, 32–3

- Schwandbach Bridge, 116, 155, 158, 167, **175**, **176**, **177**, **179**, **180**, **181**, 183, 196, 202, 234, 241
 design, 174–82
 as structural art, 178
- Schwarzen Bären Hotel, 187, **187**
- Semper, Gottfried, 6–7, 7
- Shand, P. Morton, 156–8, 199, 200, 217, 218, 225
 showed Maillart bridges to British public, 156–8
- shear-center controversy, 105–7, 241
 channel-beam problem, 105–6
 Maillart's insight and solution, 106–7, 273n40
- Sihlhölzli gymnasium, 182, 189–96, **190**, **191**, **194**, **195**, 213
- Simonette, Simon, 114, 132
- Sirakovo Viaduct, 184, **184**, 188, 202, 207
- Sitter Bridge design, 112, 184, 185–6, **185**, 207
- Solis Bridge, 17, 18, 31
- Sorbonne, 165
- Soutter, P. E., 169
- Spital Bridge, **153**, 154, **154**, 216
- Stalin, Josef, 99, 186, 215
- Stam, Mart, 151
- Stauffacher Bridge, **12**, **13**, 14, 16, 18, 75, 114, 165, 184, 201
- Steinach Bridge, 31–4, **33**, 64, 66
- Stephenson, Robert, 19
- Stettler, Ernst, 134, 139, 140, 150, 153, 159, 160, 170, 182, 207, 238
- Stolzenmühle pipe, 11
- Suter, Dr. Ernst, 192
- SIA, *see* Swiss Society of Engineers and Architects
- Swiss Credit bank building, 182
- Swiss Federal Railways, 107, 122, 126, 207
- Swiss National Bank building, 113
- Swiss National Exposition (*Landesausstellung*), Zurich (1939), 216, 218, 234, 236, 238
- Swiss Society of Engineers and Architects (SIA), 16, 35, 66, 102, 146, 212, 213, 214–15, 217, 243
- “Systeme Maillart,” 165, 172. *See also* flat slab; hollow-box design
- Tavanasa Bridge, 19, 34, 38–40, 48, 64, 78, 88, 102, 114, 121, 136, 138, 139, 142, 146, 157, 200, 227, 241, 243
 design breakthrough, 38–40, **38**, **39**, **41**, **42**
 destroyed by avalanche, 136, **137**
 flat slab resembled, 48
- three-hinged arch, 14
 in Billwil Bridge, 34–5
 in Felsegg Bridge, 170–4
 in Gadmerwasser Bridge, 228
 in Garstatt bridge, 236–7
 in Innertkirchen Bridge, 183–4
 in Lachen Bridge, 237
 in Rossagraben Bridge, 170
 in Salginatobel Bridge, 139
 in Sirakovo Viaduct, 184
 in Stauffacher Bridge, 14
 in Tavanasa Bridge, 38–9
 in Vessy Bridge, 202–5
 in Zuoz Bridge, 17–18
- Tiefencastel avalanche structure, 42–3, **44**, **45**, 254n70
- Töss footbridge, 116, 158, 167–9, **168**, **169**, 175, 182, 196, 216, 234, 236
- Traubach Bridge, 169
- Trebsenbach aqueduct, 116, **117**
- Trechsel, F., 159, 160
- Tschiffely, Mme., 97
- Tschiffely, Viktor, 86, 88, 92, 94, 97
- Turner, C. A. P., 51
- Turner, Joseph, 157
- United States, 8, 51, 68, 116, 224–5
 applied science view in early twentieth century, 116
 design view in nineteenth century, 8
- Uto Bridge design, 37, 41, 65
- Valette, Pastor, 244
- Valsana Hotel, 44
- Valtschielbach Bridge, 121–2, **121**, **122**, **123**, 126, 127, 128, 130, 131, 136, 138, 142, 146, 155, 166, 175, 178, **179**, **180**
 first concrete bridge to express extreme thinness, 122
- Vessy Bridge, 202–5, 207, 210, 219, 220, **220**, 221, **221**, **229**, 237, 241
- Vevey Quai, 182–3, 207
- Veyron Bridge, 11–2
- Vierendeel, A., 118–19
- Vögeli-Blumer, Elspeth (niece of Eduard Blumer), 225
- Vögeli-Blumer, Marieli (sister of Eduard Blumer), 225
- Voltastrasse (Maillart house in prewar Zurich), 72, **72**, 97
- Vulpera, Challenge Cup of (bridge tournament), 224
- Wädenswil (Pfenninger) factory building, 47, **47**, **48**, 50, 55. *See also* flat slab
- Wägital power plant structures, 113–14, 118, 119, 132, 146, 152
 arch dam at, 113–14, **113**
 bridges at, 116–17. *See also* Flienglibach Bridge; Schrähbach Bridge
- Wagner, Richard, 6
- Waldhaus Hotel, 217, 223–4
- Wangen Bridge, 183, 184, 202
- Wangen canal, 101

- Wattwil Bridge, 41, 56, 66
 Wayss, G. A., 10
 Ways and Freytag, 10–11, 19, 101, 220
 Weissensteinstrasse Bridge (Bern), 228, 229
 Wenner, Viktor, 12, 14, 16
 Westermann, 76
 Whitney, Charles, 116
 Wicky, Arnold (brother-in-law of Robert Maillart), 70
 Wicky, Edith (niece of Robert Maillart), 97
 Wicky, Marguerite (niece of Robert Maillart), 92, 94, 95, 96, 97, 186, 218
 Wicky, Rosa (Maillart) (sister of Robert Maillart), 11, 70, 96, 97, 158, 160, 161, 186, 188, 218, 240, 243, 244
 Widmann, Fritz, 6
 Wildegg Bridge (1890), 164
 Wild family, 26
 Wren, Sir Christopher, 236
 Wyhlen Bridge, 60, 70
 Wyss, Richard, 86, 88, 92
- Zarn, Adolph, 22, 25, 27, 28, 36, 78–9, 97, 99, 132, 150
 Zehnder, Otto, 58, 60, 62
 Zervos, Christian, 156
- Ziggenbach Bridge, 146, 175
 Züblin and Company, 111
 Zuoos Bridge, 10, 17–20, 17, 21, 28, 29, 31–2, 34, 35–6, 38, 41, 63, 75, 114, 142, 183, 193, 225, 234, 241
 Zurich Alumni Association of the ETH, 130
 criticism of Maillart, 212–13
 Zurich Amtshaus, 182
 Zurich Art Institute, 131
 Zurich Cement Hall, 218, 220, 225, 226, 226, 227, 234–6, 235, 237, 242, 242, 243
 Zurich Ceramic Hall, 234
 Zurich City Engineering Office (*Tiefbauamt*), 12, 14
 Zurich committee on reinforced concrete, *see* code, for reinforced concrete in Switzerland (1903)
 Zurich Congress Hall, 217, 236
 Zurich lectures, by Maillart: (1909) 48–9; (1911–14) 76–7; (1935) 201–2
 Zurich National Exposition, *see* Swiss National Exposition
 Zurich Opera moveable stageset warehouse, 55, 55
 Zurich Swimming Hall, 236
 Zurich University buildings, 52–5, 58–9
 Zurich warehouse (Giesshübel Street), 48, 50–1, 51. *See also* flat slab