Record Nr.	UNINA9910676519603321
Titolo	Physical models : their historical and current use in civil and building engineering design / / edited by Bill Addis
Pubbl/distr/stampa	Berlin, Germany : , : Ernst & Sohn, , [2021] ©2021
ISBN	3-433-60963-2 3-433-60962-4 3-433-60961-6
Descrizione fisica	1 online resource
Disciplina	620.0011
Soggetti	Engineering models
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"Construction History Series/Edition Bautechnikgeschichte"Title page verso.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	; Section A. Physical models from ancient times to the 1880s Models in civil engineering from ancient times to the Industrial Revolution / Dirk Buhler Block models of the masonry arch and vault / Santiago Huerta The catenary and the line of thrust as a means for shaping arches and vaults / Rainer Graefe Leonhard Euler and the model tests for a 300-metre timber arch bridge in St. Petersburg / Andreas Kahlow The use of models in early nineteenth-century British suspension bridge design / Denis Smith Models used during the design of the Conway and Britannia tubular bridges / Bill Addis ; Section B. Physical models used in structural design, 1890s-1930s The use of models to inform the structural design of dams, 1890s- 1930s / Mike Chrimes Models used during the design of the Boulder Dam / Bill Addis The role of models in the early development of Zeiss-Dywidag shells / Roland May Model testing of structures in pre-war Italy : the School of Arturo Danusso / Mario Alberto Chiorino, Gabriele Neri Eduardo Torroja and his use of models up to 1936 / Joaquin Antuna Photoelastic stress analysis / Bill Addis ; Section C. Physical models used in structural design, 1940s to 1980s Structural modelling technique / Bernard Espion, Bill Addis Physical modelling at the University of Stuttgart / Christiane Weber Model

1.

testing of structures in post-war Italy. The activity of ISMES, 1951-1974 / Mario Alberto Chiorino, Gabriele Neri -- Eduardo Torroja and his use of models from 1939 / Joaquin Atuna -- Scale models for structural testing at the Cement and Concrete Association, UK : 1951-1973 / Edwin Trout -- Heinz Hossdorf : his contribution to the development of physical model testing / Pepa Cassinello -- Soap-film and soap-bubble models / Berthold Burkhardt -- The model as a concept : the origins of the design methods of Sergio Musmeci / Lukas Ingold -- Heinz Isler and his use of physical models / John Chilton --Models for the design development, engineering and construction of the Multihalle for the 1975 Bundesgartenschau in Mannheim / Ian Liddell -- : Section D. Physical models used in non-structural engineering disciplines -- The historical use of physical model testing in free-surface hydraulic engineering / Bill Addis -- The historical use of physical model testing in wind engineering / Bill Addis -- The historical use of physical model testing in earthquake engineering / Bill Addis -- The historical use of models in the acoustic design of buildings / Raf Orlowski -- Geotechnical centrifuge models -- a history of their role in pre-construction design / William H Craig -- ; Section E. Physical modelling in the twenty-first century -- Physical models as powerful weapons in structural design / Mamoru Kawaguchi -- Physical modelling of structures for contemporary building design / Bruce Martin -- Models in the design of complex masonry structures / David Wendland -- Physical modelling of free surface water -- current practice / James Sutherland -- Boundary layer wind tunnel model testing -- current practice / Francesco Dorigatti -- Model testing using shake tables -- current practice / Amarnath Kasalanati -- Geotechnical centrifuge modelling -- current practice / David White -- The use of physical models in acoustic design -- current practice / Raf Orlowski -- Water-bath modelling -- small-scale simulation of natural ventilation flows / Owen Connick -- The use of biological models for building engineering design / Jan Knippers -- Flying a 100-metre long Jumbo Koinobori / Mamoru Kawaguchi -- Epilogue : A future for models from the past / Dirk Buhler, Christiane Weber --; Appendices. -- Appendix A.1: extracts from Vitruvius (c.30-15 BC) -- Appendix A.2 : Extract from Galileo (1638) -- Appendix A.3 : Leonhard Euler (1766) A simple rule to determine the strength of a bridge or similar structure, on the basis of the known strength of a model -- Appendix A.4 : extract from report : Telford's design for new London Bridge (1801) --Appendix A.5 : experimental models, The builder (1846) -- Appendix A.6 : on model experiments, The civil engineer and architects journal (1847) -- Appendix A.7 : Osborne Reynolds (1888) Extract from paper : on certain laws relating to the regime of rivers and estuaries. "This book covers the history of using physical models in the design and development of civil and building engineering projects ... "-- Page 4 of cover

Sommario/riassunto

1110/110550110