

1. Record Nr.	UNINA9910455589803321
Titolo	An anthology of structural morphology [[electronic resource] /] / edited by Rene Motro
Pubbl/distr/stampa	Singapore ; ; Hackensack, NJ, : World Scientific, c2009
ISBN	1-282-76073-4 9786612760730 981-283-721-3
Descrizione fisica	1 online resource (211 p.)
Altri autori (Persone)	MotroRene <1946->
Disciplina	624.1 624.1/7 624.17
Soggetti	Structural analysis (Engineering) Structural design Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	CONTENTS; Preface; 1. The First 13 Years of Structural Morphology Group - A Personal View T. Wester; 1. The Background; 2. The Beginning; 3. Group Activities; 3.1.1. SMG1 - Montpellier Seminar 1992; 3.1.2. SMG2 - Stuttgart Seminar 1994; 3.1.3. SMG 3 - Nottingham Colloquium 1997; 3.1.4. SMG 4 - Delft Colloquium 2000; 3.1.5. SMG 5 - Montpellier Seminar (workshop) 2004; 3.2. SMG Newsletter; 3.3. SMG Activities at IASS Conferences e.g. Sessions, Meetings; 3.4. The SMG Seminar Proceedings (see also chapter 3.1); 4. Further Recent SMG-Relevant Reading; 5. Tsuboi Awards; 6. Research and End Notes Acknowledgements2. An Approach to Structural Morphology R. Motro; Introduction; 1. Structural Morphology; 1.1. Structure and System; 1.1.1. Structure; 1.1.2. System; 1.1.3. Structure and System; 1.1.4. Conclusion; 1.2. Form and Structure; 1.3. The Design Process; 1.3.1. Structures and Constructions; 1.3.2. Design of Structures; 1.3.3. Modelling the Design Process; 1.4. Structural Morphology; 2. Landmarks; 2.1. Stone Cutting; 2.2. Geometry; 2.3. Bionics; 2.4.

Equilibrium Forms; 3. Form and Meaning; 3.1. Structural Morphology and Art; 3.2. Order and Harmony; 3.3. Form and Meaning; Conclusion References

3. The Structural Morphology of Curved Diaphragms - Or the Structural Behaviour of Floral Polyhedra T. Wester; 1. Basic Stability in 3-Dimensional Space; 2. The Genus of Polyhedra; 3. Plane Faceted Polyhedra - Genus Zero; 4. Plane Faceted Polyhedra - Genus above Zero; 5. Infinite Polyhedra; 6. Floral Polyhedra; 7. Conclusion; References and Notes

4. Polyhedroids P. Huybers; 1. Definition of Polyhedra; 2. Regular and Semi Semi-Regular Polyhedra; 3. Index Numbers for Polyhedra; 4. Close-Packings; 5. Prisms and Antiprisms; 6. Augmentation; 7. Sphere Subdivisions; 8. Sphere Deformation

9. Polyhedra in Building n9.1. Cubic and Prismatic Shapes; 9.2. Solitary Polyhedra; 9.3. Combinations; 9.4. Domes; 10. 3D-Slide Presentation; References

5. Novational Transformations H. Nooshin, F. G. A. Albermani and P. L. Disney; 1. Introduction; 2. An Example; 3. Novations; 4. Sharp Novations; 5. Exponential Decay Novations; 6. Multiple Specifications; 7. Further Examples; 8. Indirect ED Novations; 9. Novation Function; Acknowledgements; References

6. Some Structural-Morphological Aspects of Deployable Structures for Space Enclosures A. Hanaor; 1. General Principles

2. Double-Layer Grids2.1. Pantographic Grids; 2.2. Other DLG Bar Systems; 2.3. Strut-Cable Systems; 3. Single-Layer Retractable and Dismountable Grids; 3.1. Angulated Pantographic Grids; 3.2. Reciprocal Grids and Ruled Surfaces; 4. Masts and Spines for Fabric and Hybrid Structures; 4.1. Rigid Bar Grids; 4.2. Strut-Cable Systems; 5. Plate Structures tructures; 5.1. Folded Plates; 5.2. Curved Surfaces; 6. Tensioned Membrane Systems; 6.1. Fabric and Hybrid Structures; 6.2. Pneumatic Structures; 7. References; 7.1. General; 7.2. Double-Layer Pantographic Grids; 7.3. Double-Layer Bar Grids

7.4. Strut-Cable Systems (DLGs)

Sommario/riassunto

The structural morphology working group of the International Association for Shell and Spatial Structures, founded in 1991, has helped to launch several international seminars, newsletters and specific sessions of international conferences devoted to structural morphology. This book contains papers that have been selected either for their fundamental contribution to structural morphology or for their actual pertinence in the field. Polyhedral geometry, double-curved surfaces, biological structures, foldable systems, form-finding techniques, and free form design are some of the topics included