

Contents

Introduction		viii
J. Fidler, J. Hurd, L. Watson		viii
Archaeological monuments and sites		
Archaeological monuments and sites		
F. Matero	3	
La arquitectura religiosa del Valle de Oyon, Peru		
M. Beas, P. Navarro Grau, C. Maguina	4	
The earth below: 'Earthworks'		
Bob Bewley and Paul Everson	9	
Conservation management planning for earthen architecture: Chan Chan, Peru		
C. Castellanos, A.M. Hoyle	13	
San Diego royal presidio: conservation of an earthen architecture archaeological site		
D. Calarco	19	
Preserving the earthen monuments in the Stonehenge and Avebury archaeological landscapes		
A. Chadburn, D. Batchelor	26	
Preservation of prehistoric earthen architectural finishes in Mesa Verde National Park, Colorado		
K. Fiero, F. Matero, A.B. Rivera	31	
Learning from the site: Evolution of the Fort Union Strategic Preservation Plan		
R. Hartzler, A. Oliver	39	
Walling old Sana'a: Re-evaluating the resurrection of the city walls		
T. Marchand	46	
Condition and treatment history as prologue to site conservation at Casa Grande Ruins National Monument		
F. Matero, E. del Bono, K.L. Fong, R. Johansen, J. Barrow	52	
Deux sites architecturaux en terre inscrits à la Liste Patrimoniale mondial: le Ksar des Aït Benhaddou au Maroc, le Fort et Oasis de Bahla à Oman - problèmes de conservation et de gestion		
J-L Michon	65	
La tradicion constructiva en tierra en Catalunya: El ejemplo de Terrassa		
A. Moro, A. Cuchi	73	
Understanding the deterioration of adobe walls: Fort Union National Monument, New Mexico, USA		
A. Oliver, R. Hartzler	78	
Restoration and maintenance of the earth and stone walls of Khor Rori		
R. Orazi	86	
Developpement touristique de Pachacamac		
A. Stevens	93	
Monks Mound revisited		
W. Woods	98	
Materials and craftsmanship		
Materials and Craftsmanship		
G. Chiari	107	

Arquitectura sustentable de tierra en la Habana F.T. Casal Iglesias	115
Identification of the binder in the paintings of the ancient Manchay culture (Peru) A.Casoli, G. Chiari, R. Burger, L. Salzar-Burger, G. Palla, M. Vizzari	120
Decorative interior features of twentieth-century ladiri buildings of Campidano and their traditional repair methods E. Fodde	125
Architecture in China: 'The work of earth and wood' T. Holmes	132
The history of rammed earth buildings in Switzerland T. Kleespies	137
Some preliminary studies of the thermal properties of Devon cob walls S. Goodhew, R. Griffiths, L. Watson, D. Short	139
The use of lime plasters for waterproofing and decoration of mudbrick buildings in Yemen P. Jerome	144
An analytical study of earth-based building materials in southern Brazil M.I. Kanan	150
Learning to build with earth H. Lippe	158
Surface finishes to earth buildings: Lime mortars and limewashes P. Mold	161
Comportement d'un muret en blocs de terre comprimée sollicité en compression simple A. P'Kla, J.C. Morel, A. Mesbah	164
Wall paintings on earthen supports; Evaluating analytical methods for conservation L. Shekede	169
Review and experimental comparison of erosion tests for earth blocks P. Walker	176
Analysis of material, construction and damage in historical cob buildings in central Germany C. Ziegert	182
Conservation, repair and maintenance	
Conservation, maintenance and repair of earthen architecture: Which way do we hold the map? M. Taylor	189
Una obra de tapia de Antonio Gaudi J. Bassegoda, R.C. Gaudi	195
The restoration of Jénne, Mali: African aesthetics and Western paradigms R. Bedaux, B. Diaby, P. Maas, S. Sidibe	201
Straw stubble thatch D. Bouwens	208
Earth building in New Zealand: A little known heritage J. Bowman	210
Treatment of an adobe painted frieze in Cardal, Peru and its evaluation after 12 years G. Chiari, R. Burger, L. Salzar-Burger	216
Architecture dogon: problematique de la conservation des	

Gin'na au regard des changements sociaux et religieux en milieu traditionnel dogon M.L Cisse	218
Restoration of the Casas dos Romeiros, using traditional materials and methods: A case study in the southern Alentejo area of Portugal M. Correia, J.D. Merten	226
Estudio del tapial para la intervencion en edificaciones de interes cultural - Brasil R. Flores	231
The restoration of D'Orazio house, Casalincontrada S. Giardinelli, G. Conti	238
Seismic shaking table tests of retrofits for large-scale model adobe structures W. Ginell, E.L Tolles, P. Gavrilovic, V. Sendova	242
Sistemas estructurados de Madera en iglesias de tierra del norte de Chile P.M. González, M.B. Prieto	249
Possible causes of structural failure in traditional cob buildings L. Keefe, L Watson, R Griffiths	251
The conservation and presentation of earthen structures at Great Zimbabwe: The Posselt house project case study J. Matsikure	261
Solutions techniques pour la restauration des remparts de Taroudannt (Maroc) A. Mesbah, J.C. Morel, J.M. Gentilleau, M. Olivier	266
Continuity of tradition	
Continuity of tradition: New earth building S. Dobson	275
A new building in raw earth P. Agattau, D. Aru	276
Continuity of tradition: New earth building in the Southern Alentejo, Portugal Teresa Beirao and Alexandre Bastos	279
A building unit of culture: A dialogue between the formal technology and vernacular tradition A. Botros, Wael S. Abdel-Maggeed	283
Architecture in transition: Vernacular architecture of Chachapoyas, Departamento de Amazonas, Peru R.B. Brown	291
Hungarian earth architecture: Past and present M. Buzás, M. Cseri	295
Adobe for the poor: The impossible challenge A. Cheikhrouhou	301
El patrimonio como modelo: El nuevo teatro de Balaguer (Catalunya) A. Cuchi	307
Mud-and-stud construction: Compliance with modern planning and building regulations D. Glew	312
A rational return to earth as a contemporary building material R. Harries, D. Clark, L. Watson	319
Structural rammed earth at the Centre for Alternative Technology C. Harris, P. Borer	322
Building with clay and earth in Sweden	

E-R. Lindberg	327
Sustainable low-cost housing: The Lak's Uta, Altiplano, Bolivia	
C. Lutzen, B. Rambòll	334
Earth building materials: New products, new applications	
G. Minke	339
Experience with domed and vaulted structures in new earth buildings in Sardinia: Continuity of tradition and sustainable development	
S. Piras	342
Innovative earth architecture: Consciousness-raising for new mud building technologies	
P. Schmid	347
Natural materials, 'zero emissions' and sustainable construction	
T. Woolley	352
Political, legal and economic context	
Protection and Promotion: The steps beyond 2000	
J. Warren	361
Current activities of the Centre of Studies and Research on Regional Earthen Architecture	
M. Achenza, E. Siviero	366
Finding the balance: Recalling cultural form and process at Zuni Pueblo, New Mexico	
T. Atkin, E. Crocker, S. Gasper	370
Clay-building: A social process for sustainable development	
K. Beck	376
Earthen architecture in Italy: Types, technologies and building cultures	
M. Bertagnin	379
Structuring the discipline: The conflict between theory and practice in the conservation of earthen architecture	
E. Crocker, E. Rojas	383
L'architecture de terre de Djenné: Problematique de sa conservation	
A. Diop, B.H. Diaby	389
Mundos geo-arquitectonicos: Estudio y conservacion	
A. Hays, S. Matuk	394
The role of a conservator in post-disaster and post-war reconstruction and rehabilitation	
J. Hurd	402
Towards industrialised earth structures	
R. Keable	404
Earthen architecture in Moldova	
S. Munteanu	407
The earth architecture of Graeme North: The work of a leading New Zealand earth architect from 1971-2000	
G. North	411
Traditional and new earth building in the Dakhleh Oasis in Egypt	
W. Schijns	419
Building with earth in Germany: Current tendencies	
H. Schiroeder	426
Inventaire, documentation et methodologie de conservation de l'architecture en terre en Republique Tchèque	
Z. Syrovà , J. Syrovy, J Kríz	430
Training in the conservation of earthen architectural heritage: Building a field of study	

M. Trappeniers, T. Joffroy, E. Avrami, A. Alva	436
Posters	
Archaeological monuments and sites	
Archaeological monuments and sites in the Middle Volga	
E-A. Akhmedova	443
Status of conservation of the Amber Palace, Amber Jaipur (Rajasthan)	
S. Swami, Dr Hotchand	443
Materials and craftsmanship	
Renderings for earth construction	
P.F. Rodrigues	444
Conservation, repair and maintenance	
Les remparts de Taroudannt, enjeu de développement	
J.M. Gentilleau	444
Continuity of tradition	
El uso del tapial en la selva del Perú	
R. Flores	445
Landscape architecture proposals for environments degraded by open-cast mining	
L. Konstantin	446
Traditional forms and building techniques in clay in Croatia	
Z. Mavar	446
Earth building in Nottinghamshire	
C. Beaumont, M. Strawbridge	447
Rammed earth as used for the new Chapel of Reconciliation in Berlin	
K. Dierks, C. Ziegert	447
Post-modern rural housing: Some design suggestions	
E.S. Mahendarajah	448
Earthquake-resistant affordable clay houses	
B. Baghaei, G. Jóhannesson	448
Political, legal and economic context	
Terrace houses in Cabras (Sardinia)	
C. Aymerich, G. Loddo	449
Earth-house	
M. Buzas	449
Raw earth buildings in Abruzzo, Italy	
G. Conti	450
"A good hat and a good pair of boots": Literary references to cob	
M. Ford	450
New life for slag and ash heaps	
/, Kukina	450
Large pigeon towers in the province of Esfahan (Iran): Endangered traditional adobe buildings	
H. Kulke	451
Earth constructions in the Data Base on ecological building (DBEB)	
P. Medgyasszay, A. Csicsely	452
Census and cataloguing of houses in the Abruzzo region, Italy	
A. Perrotti, P. Pisano, P. Gentile, M. Cicchitti	452