

A history of innovation in earth building

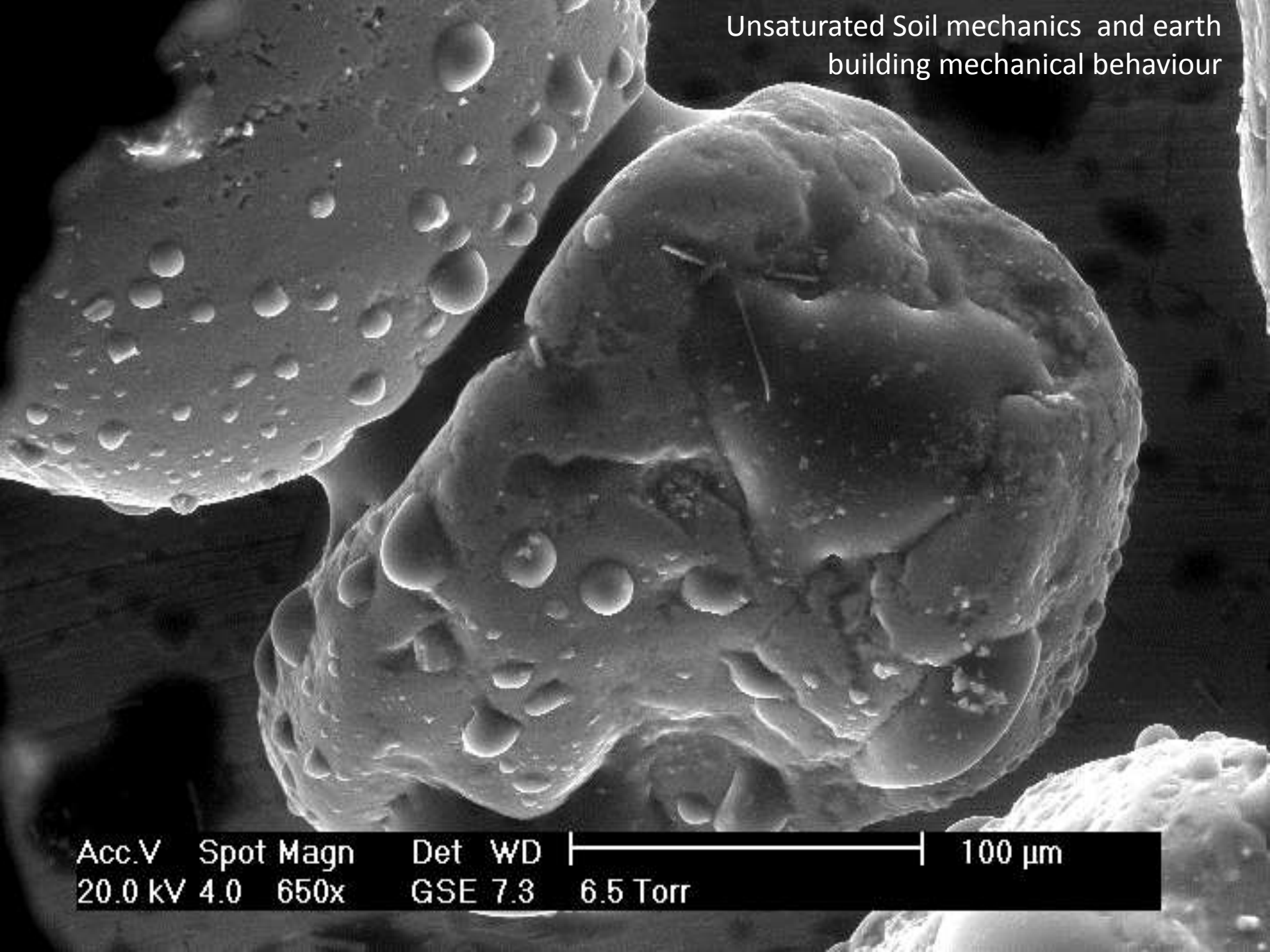
Paul Jaquin



PhD – Analysis of Historic
Rammed Earth Construction



Unsaturated Soil mechanics and earth
building mechanical behaviour



Acc.V	Spot	Magn	Det	WD		100 μ m
20.0 kV	4.0	650x	GSE	7.3	6.5 Torr	





Structural Engineer UK



ModCell
Straw bale panel
Fire test



Structural and Geotechnical Engineer
Land Development and Exploration
Warkworth
New Zealand

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Mix additives
Building strengthening
Process improvement

Now

Future

Not technical

9,000 BC

Jericho



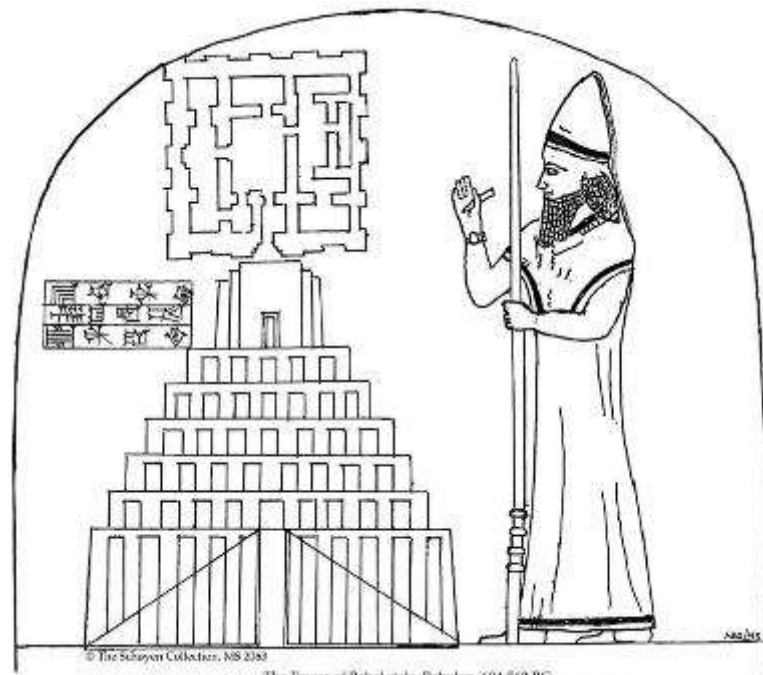
Straw
Development of agriculture.
Incorporated into the walls
Pre - pottery

Evidence for food storage and predomestication granaries
11,000 years ago in the Jordan Valley, Ian Kuijta, and Bill
Finlayson



Etemenanki

2000BC



The Tower of Babel stele. Babylon, 604-562 BC.
Reconstruction by Martin Schøyen after an original drawing by Andrew George

Nebuchadnezzar am I ...The base I filled in to make a high terrace, I built their structure with **bitumen and baked brick** throughout. I completed it raising its top to the heaven...

Now the whole world had one language and a common speech. As people moved eastward, they found a plain in and settled there. They said to each other, "Come, **let's make bricks and bake them** thoroughly." They used brick instead of stone, and **tar for mortar**.

MS 2063
The Tower of Babel stele. Babylon, 604-562 BC.
The only contemporary illustration of The Tower of Babel

Schøyen Collection

Unfired
Straw
Bricks

1200BC



British Museum, number EA6020

Hakka Tolou, Fujian
Paddy field water



Lime

1. NATURAL HYDRAULIC LIME

Where clay is contained within the limestone

Pantheon, Rome

126 AD

Natural Pozzolanic concrete

AN

is burnt active clay,
der and mixed with



Spain

967 AD



Rammed earth
Lime





A

B









Wie man die Mauern eines Gebäudes von gestanzter Erde aufstellt.



Now





SIREWall



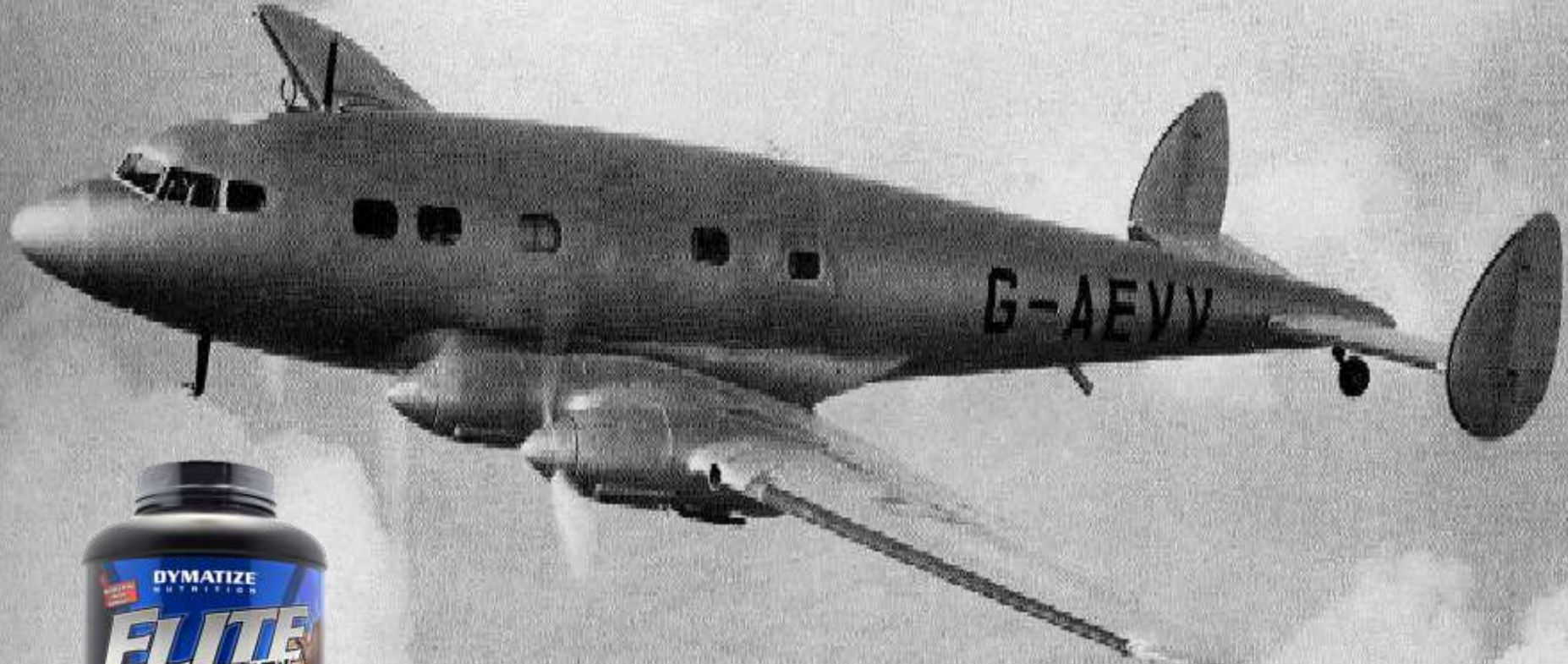
Future

3D Printed clay



Ronald Rael
Emerging Objects

De Havilland Albatross 1939



FlightGlobal August 1972

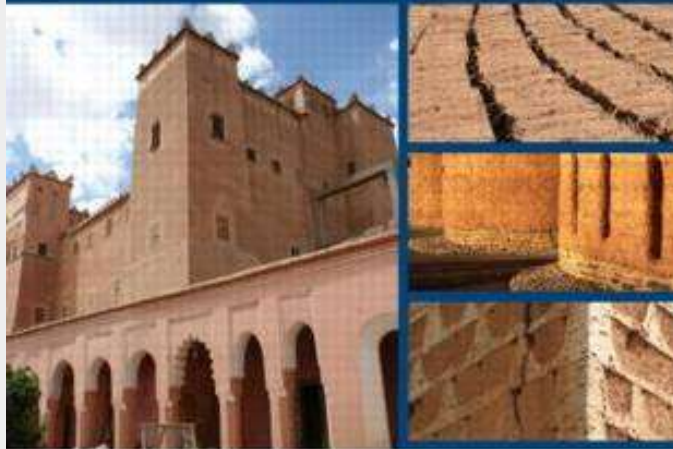




EARTH BUILDING

History, science and conservation

Paul Jaquin and Charles Augarde



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HISTORIC
RAMMED
EARTH

