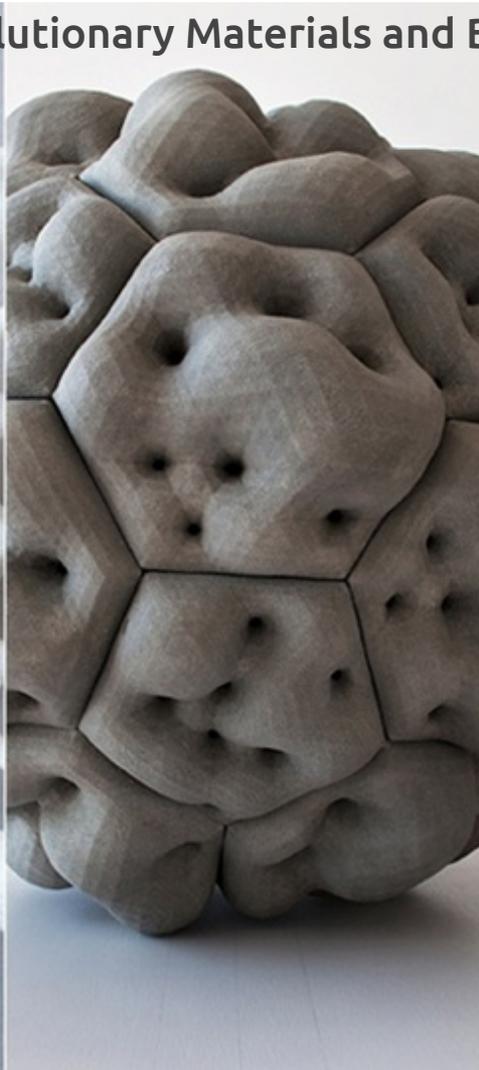
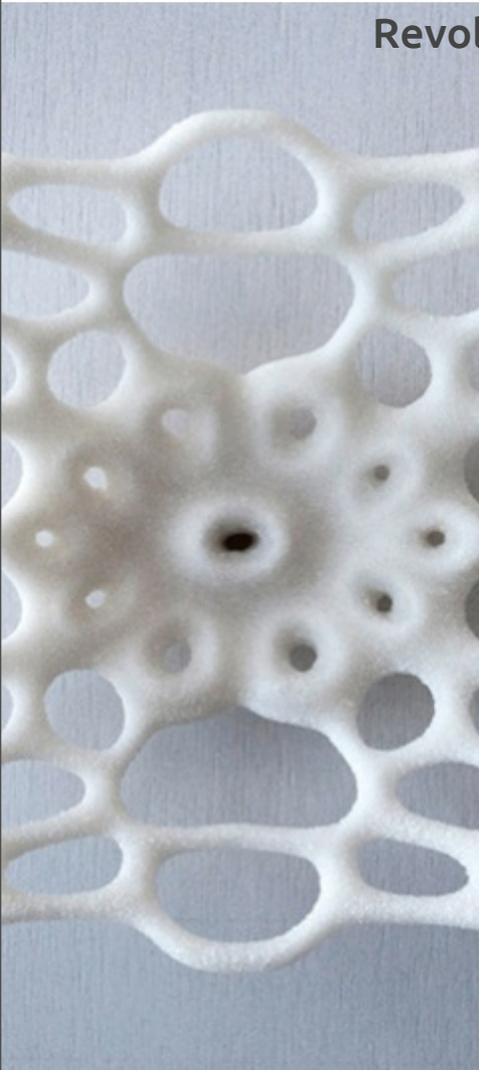


# emerging objects

Revolutionary Materials and Building Blocks for 3D Printing



**Stephan Adams**  
510.326.6666  
sadams@emergingobjects.com

**Ronald Rael**  
510.207.2960  
design@emergingobjects.com

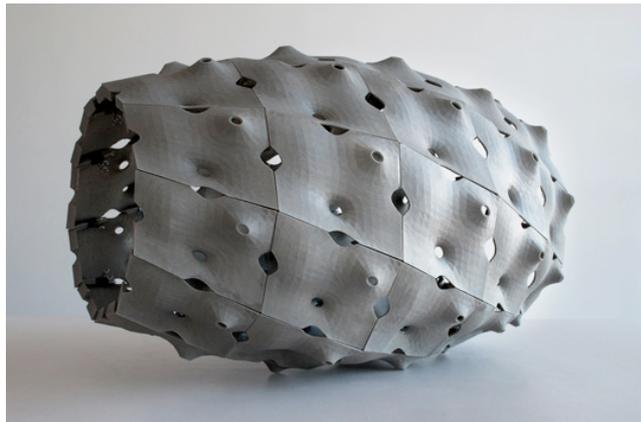
## Revolutionizing Cement

- Cement has been in use for 5,000 years
- Cement is the most pervasive and affordable building material in the world
- Cement materials and methods need to transform for 3D printing



## Cement Polymer for 3D Printing

- 3D printing expands cement's capabilities, as no formwork is required
- 3D printing enables custom on-demand large-scale "building block" fabrication
- Cement polymer powder is ideally suited for all scale 3D printing applications



# Emerging Objects' Cement Polymer

- Developed cement polymer specifically for 3D printing
- Other unique 3D printable materials have emerged from this R&D
- Proprietary formula has many material and cost advantages



## **cement**

- no formwork
- stronger than concrete
- translucent



## **salt**

- renewable resource
- inexpensive
- structural



## **wood**

- industrial by-product
- material richness
- lightweight



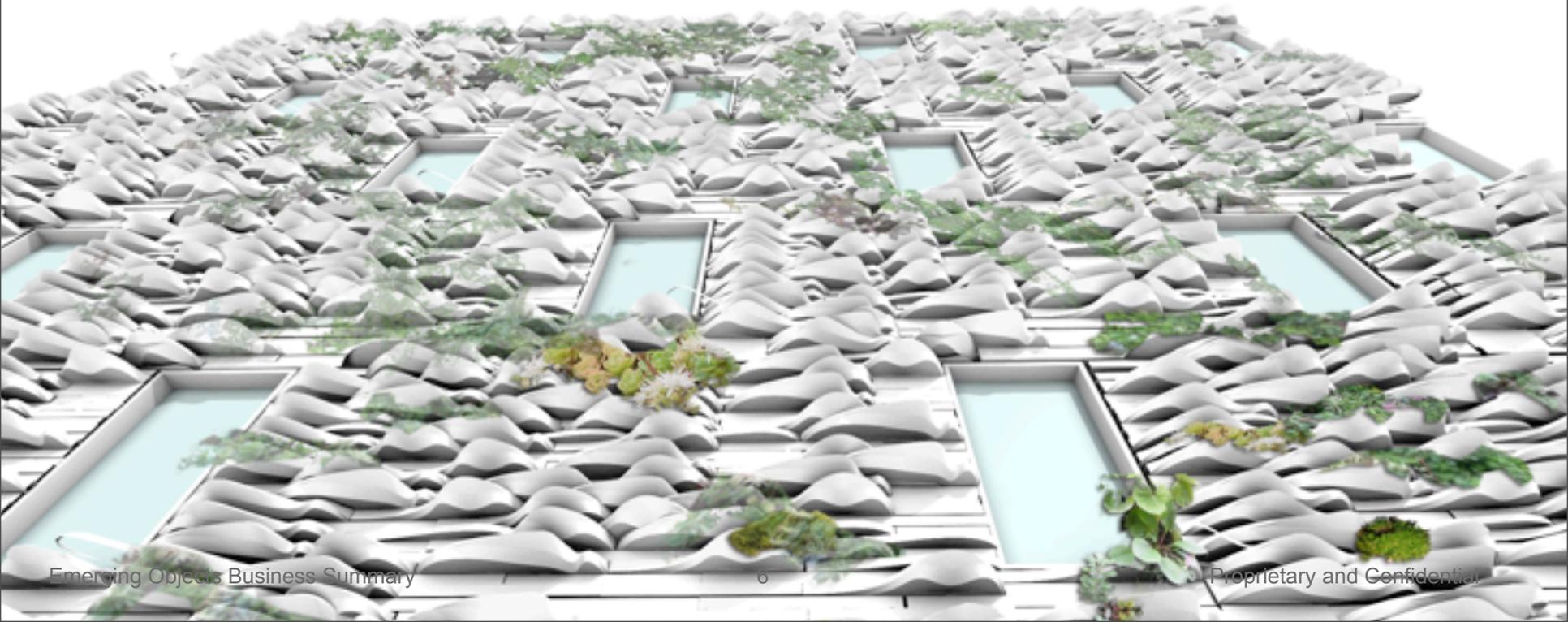
## Use Case Scenario

- Build a full-scale 3D printed dwelling using proprietary materials: cement, salt, wood
- Demonstrate structural potential of proprietary materials
- Integrate building systems into a design
- Show the possibility of printing at unprecedented sizes
- Demonstrate material capabilities: translucency, strength, finishes



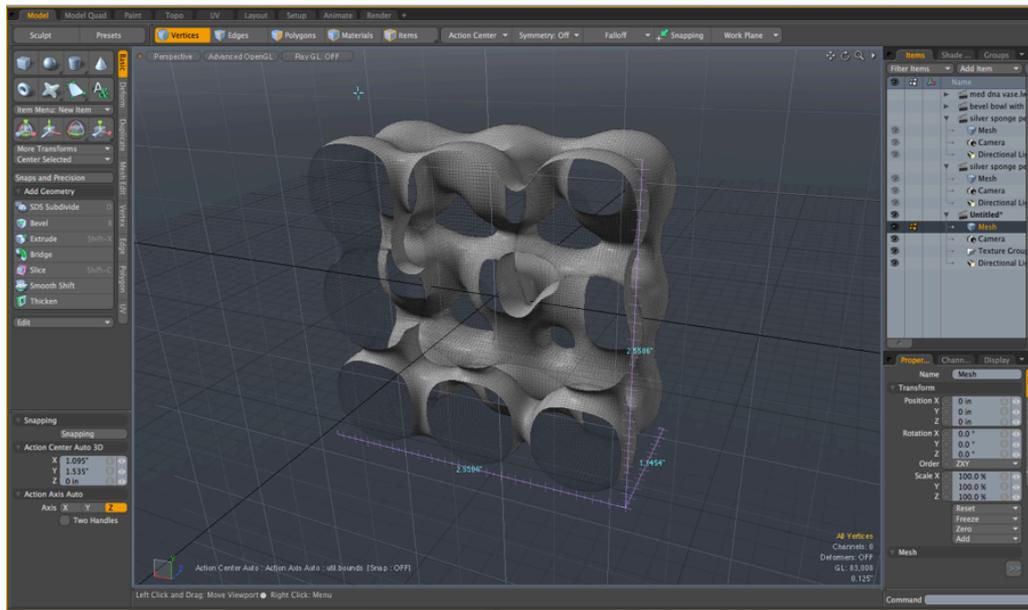
## Use Case Advantages

- Materials are stronger and lighter than typical concrete in compression
- Zero waste, each building block is unique without need of formwork
- 3D printed designs can respond to specific environmental factors
- Wiring and sensors can be integrated into 3D printed parts
- Raw materials for remote construction can be sourced onsite



# Online Design Suite

- Web application for converting large-scale objects into 3D printable building blocks
- Service for designing large-scale objects and associated building blocks
- On-demand 3D printing service of user designed objects and building blocks
- Host community that shares user created objects and building blocks



## Comprehensive Business Strategy

- Fine tune material formula for commercial use
- Create line of customizable 3D printable objects and building block designs
- Provide architectural services specializing in proprietary building blocks
- Develop web-based tools to construct custom objects out of building blocks
- License material formulas to very select strategic partners



## Advanced R&D Lab

- Leverage University professorships and resources to further R&D
- Incubate post graduate research in 3D printing material science
- Build software frameworks for online custom user experience



## Competitive Market Advantages

- Exclusive use of patented UC Berkeley cement polymer
- Deep understanding of architecture, materials, and 3D printing
- Expensive material science R&D presents competitive barrier of entry
- Integrated end-to-end market strategy and product roadmap
- First to market leadership position, leading to market dominance



## Series A Capital Use

- Test, certify and commercialize cement polymer
- Rent office space and acquire R&D equipment
- Hire material scientists and technical team
- Establish online presence and channel partnerships



## Founding Team – Creative

### **Ronald Rael – R&D Lead and Materials Visionary**

- Tenure Professor at University of California at Berkeley, Departments of Architecture and Art Practice
- Co-director of Clemson University’s Center for Building Research and Urban Studies in Genova, Italy
- Faculty positions at:

Southern California Institute of Architecture in Los Angeles  
University of Arizona  
University of Colorado at Boulder

- Author of the book, Earth Architecture – a history of building with earth materials in the modern era
- Exhibited at international museums worldwide and recipient of numerous awards and frequently published
- M.Arch from Columbia University and recipient of the William Kinne Memorial Fellowship

### **Virginia San Fratello – Professional Services Lead and Product Visionary**

- Licensed practicing architect
- Assistant Professor at San Jose State University, Department of Design
- Faculty positions at:

University of California at Berkeley  
California College of the Arts  
Clemson University: Co-director of the Center for Building Research and Urban Studies  
Southern California Institute of Architecture in Los Angeles

- Research in convergence of digital, ecological, and building component design in architecture
- Recipient of numerous design awards and published in many design and architectural magazines
- M.Arch from Columbia University

## Founding Team – Business

### **Stephan Adams – Business Executive Lead and Software Visionary**

- Launched Artiful.net, a 3D printing home décor and novelty content library
- Leading development efforts hand gesture authoring software for virtual object modeling to 3D print
- CEO and Executive Chairman of Adamation, an award winning software and digital media company
- Raised \$12 million in venture capital for Adamation and negotiated global strategic partnerships
- Led commercialization of numerous consumer and enterprise software solutions
- Executive consultant to KANA CEO in turn around and subsequent privatization of public company
- Identified and led successful acquisition of professional service company for KANA
- BS in Sociology from University of California at Berkeley

### **Robert Geshliger – Product and Services Commercialization Lead and Customer Advocate**

- Regional Sales Manager, Peak Solutions, sold 3D printers and scanners to government, academia, and industry
- Medical Device, R&D Engineer and product design consultant
- Specialist in 3D CAD modeling, industrial design, fabrication processes, end customer documentation
- Listed on numerous patents for Sadra Medical, Nellix, Inc. (medical devices) and Eoplex, Inc.
- Construction management for technology incubator in build out of 3D printing R&D lab
- President of company that custom fabricated anatomical models for training and marketing purposes
- Managed a shop with 15 employees in a high-end costume jewelry design and manufacturing company
- BFA in Painting from Pratt Institute