

2019 NCMA
FOUNDATION
ANNUAL REPORT

NCMA
FDN



2019 NCMA FOUNDATION ANNUAL REPORT

The NCMA Education and Research Foundation continues to be a valuable source to advance and support the manufactured concrete masonry and hardscape industry. Since incorporated in 1988, The NCMA Foundation has funded 100s of projects and invested more than \$2.5 million in grants to industry research for codes and standards, educational opportunities for architectural and engineering students and workforce development. This Annual Report lists the projects that we have tackled in 2019. While some of the research spans more than one year, other projects are completed on an annual basis. We have selected a few projects to highlight for this report, but you can learn more about each one on our website. www.ncma.org/foundation



Kevin Curtis
Besser Company
2019 NCMA Foundation Chair

BIM-M

BIM for Masonry (BIM-M) is a success story for the masonry industry, bringing together a consortium of industry associations focused on a singular goal – ensure that masonry is well represented in BIM software and is able to serve the needs of designers in a digital world. From 2011 until 2019, the NCMA Foundation invested over \$350,000 in this effort, which resulted in a number of deliverables and charted a course for the use of masonry in BIM. This initiative created tools for designers, manufacturers, and contractors using BIM and also provided exposure of masonry to BIM users through events such as the BIM Forum. While the BIM-M consortium has sunset, the work is not done. The NCMA Foundation continues to invest in projects creating and enhancing digital technologies for concrete masonry.

Some specific deliverables from the BIM-M Initiative:

- Masonry Unit Database – the MUD provides BIM users with masonry unit information that can be used in BIM. In addition to a database that is publicly available, a plug-in for Revit was also created to access the MUD.
- Masonry Wall Content Pack – a free plug-in for Revit that provides users with a library of common masonry elements – including walls, lintels, columns, and more.
- Contractor’s Guide to BIM – a free publication that educates contractors on how to integrate BIM into their businesses, along with real life success case studies.
- Direct Design/Revit Connection – Direct Design Software is an easy-to-use concrete masonry building design software. Through BIM-M funding, an import/export feature to and from Revit was added to simplify workflows for BIM users.





PROJECTS COMPLETED IN 2019

SPOTLIGHT – 13th North American Masonry Conference Sponsorship

The NCMA Foundation was a Diamond Sponsor for The Masonry Society's 13th North American Masonry Conference (NAMC). This conference successfully hosted more than 220 individuals from more than 20 countries. Chaired by Dr. Fernando Fonseca, the conference provided technical content (from more than 150 presentations), networking opportunities, and a friendly and inviting atmosphere. In addition, approximately 10 exhibitors and 17 Innovative Technology Sessions allowed industry partners to interact with attendees, share their products and learn. Dr. Patrick Dillon of WDP and Associates led the technical program, coordinating reviews and presentations of excellent technical content. The conference is held every four years.

PROJECTS COMPLETED IN 2019

- *Direct Design Software* Development – v3.0 – PI: Ensoltech
 - Finalized the third version of this powerful design tool
- Assessment of SRW Units Stability During Construction – PI: NCMA
 - Provided information for NCMA committees to address technical issues
- Development of Two Online Education Modules for Architects through AEC Daily – PI: NCMA
 - Delivered needed education on concrete masonry to architects and designers
- 2018 Architecture Student Design Competition – PI: Pennsylvania State University
 - Engaged the next generation of architects
- Unit Design Competition 2019 – PI: NCMA
 - Encouraged undergraduate students to learn about CMU and SRW production and design unique products
- Making the Case for CMU Residential Design and Construction (Phases 1 & 2) – PI: Syracuse University
 - Developed preliminary designs for urban residential homes using CMU
- Architecture Student Design Competition –Dry Stack Masonry Construction Around the Globe – PI: Ball State University
 - Engaged the next generation of architects
- NCMA Engineering Internship – PI: NCMA
 - Engaging a student in masonry research at NCMA's Laboratory



PROJECTS FUNDED IN 2019

SPOTLIGHT: Collaboration across the border

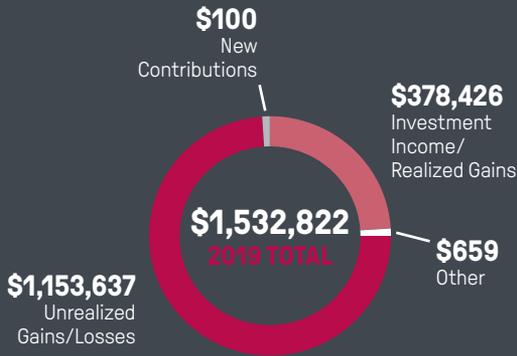
Designers and researchers from both Canada and the United States have been participating in the CANUS Masonry Design Summit. The primary objective is to conduct a comprehensive comparison of the requirements of the design standard in both countries, design results, and corresponding loading criteria applicable to the US and Canadian markets for concrete masonry construction, and identify short-term revisions that can be implemented to improve and harmonize these standards. Additionally, the group has been developing long-term research needs that can influence both countries codes and standards. The summit was held in October 2019, where participants met for a week.

PROJECTS FUNDED IN 2019

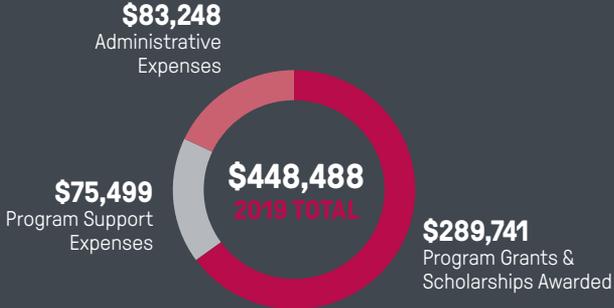
- Development of Lambda Factors for Lightweight Grout – PI: Clemson University
- *Direct Design Software*: Updates/Enhancements For V3.2 and beyond – PI: Ensoltech, Inc.
- Architecture Student Design Competition – PI: Bowling Green State University
- Technical Details Modernization – PI: NCMA
- Calculated Fire Resistance Regression – PI: Western Kentucky University
- Freeze-Thaw Durability Assessment of Manufactured Segmental Retaining Wall Units with Crumb Rubber Aggregate – PI: NCMA
- 2019 Architecture Student Design Competition – PI: Pennsylvania State University
- Dry-Stack Prism Recalibration – PI: NCMA
- *SRWall* Design Software Upgrade – PI: Ensoltech, Inc.
- Prism Aspect Ratio Recalibration – PI: NCMA
- Making the Case for CMU Residential Design and Construction (Phases 3 & 4) – PI: Syracuse University
- Non-destructive Evaluation (NDE) of Manufactured Units – PI's: NCMA and SoundQA Solutions
- Creation of Third Online Education Modules for Architects thru AEC Daily – PI: NCMA
- 2019 Design Build Competition – PI: Pennsylvania State University

FINANCIALS

REVENUES



EXPENSES



NET ASSETS	2019	2018
Net Assets, Beginning of the Year	\$7,807,566	\$8,627,725
Net Operating Revenue	\$1,084,334	\$(802,159)
Net Assets, End of the Year	\$8,891,900	\$7,807,566

Note: The 2018 figures reflect those in the Foundation's audited year-end financial statements. The 2019 figures are preliminary and subject to change pending audit.