The mission of the NCMA Education and Research Foundation is to advance and support the concrete masonry and hardscape industry and the public interest through research and educational programs designed to meet the future needs of the industry. This mission was even more critical in 2020, as our industry faced the challenges of the COVID-19 pandemic. This certainly had an effect on many Foundation projects, especially those with colleges and universities that faced shutdowns. It is promising, however, that much great work was still accomplished. Throughout 2020, the Foundation awarded $267,725 in new grants covering a wide variety of needs. This Annual Report highlights both new projects awarded as well as those completed in 2020. You can learn more about all these projects and initiatives on the Foundation website at www.ncma.org/foundation.

Stan McCarthy
Acme Brick Company
2020 NCMA Foundation Chair
PROJECTS FUNDED IN 2020

SPOTLIGHT: Moisture Accumulation in Concrete Masonry Construction

Moisture intrusion and condensation issues are an increasing problem in wood and steel stud construction. Unfortunately, designers are often taught that detailing strategies for frame construction are also applicable to concrete masonry construction when the opposite is true. As a result, concrete masonry construction is – at best – more costly to build than necessary, or, at worst, the addition of things like vapor barriers leads to performance issues in concrete masonry construction that wouldn’t have been present if the frame strategies were not applied. Through this research grant awarded to the National Brick Research Center at Clemson University, a series of physical and modeling investigations will document the ‘dew point’ within various concrete masonry assemblies. These will incorporate different finishes located in all climate zones to better educate designers on proper detailing with concrete masonry construction.
The recent pandemic has furthered both the desire and need for virtual training. Young designers want more options for self-taught training and on-demand education. To address these demands, The Masonry Society (TMS) is developing a Masonry Education Hub to centralize education on a variety of masonry topics targeting designers, educators (university professors and college faculty), students and others in various online formats (YouTube-type videos, recorded webinars, “Night School” classes, university courses, and more). The Masonry Education Hub will also provide users of masonry systems a centralized system to learn more about masonry, find resources on masonry, and track educational hours they may need for their own credentials.
ADDITIONAL PROJECTS FUNDED IN 2020:

- 2020 Architecture Student Design Competition – Ball State University
- 2020 Architecture Student Design Competition – Bowling Green State University
- 2021 Unit Design Competition - NCMA
- 14th Canadian Masonry Symposium Sponsorship – Canada Masonry Design Centre
- 2020 CANUS COMRED Program - NCMA
- FLASH Strong Homes Initiative – Masonry Association of Florida
- SRW Installer Workforce Development Initiatives - NCMA
- AIA Legacy Project – Masonry Association of Florida
- 2020 Architecture Student Design Competition – Penn State University
- NCMA Engineering/Architecture Internship - NCMA
- Federal Highway Administration Freeze/Thaw Durability Comparison Assessment – Phase II - NCMA
- TMS 402/602 Enhanced Commentary – The Masonry Society
- Viability of Fiberglass Mesh Joint Reinforcement or Polypropylene Fibers in Mortar for Crack Control – NCMA
PROJECTS COMPLETED IN 2020
SPOTLIGHT: Unit Design Competition

Despite not being able to meet in person, the 2020 Unit Design Competition was held in conjunction with NCMA’s Virtual Midyear Event. Four teams competed by producing videos on their unique unit designs. These were shown to attendees highlighting the hard work and dedication from each of the teams. In the end, the following awards were given:

- **First Place**
  North Carolina State University

- **Second Place**
  Mississippi State University

- **Third Place**
  Iowa State University

- **Honorable Mention**
  Ball State University
PROJECTS COMPLETED IN 2020

SPOTLIGHT: Canada/U.S Masonry Design Standard Summit

Designers and researchers from both Canada and the United States participated in the Canada/U.S. Masonry Design Summit. The primary objective was to conduct a comprehensive comparison of the requirements of the design standard in both countries, design results, and corresponding loading criteria applicable to the U.S. and Canadian markets. Using this comparison, short term revisions were identified that could be implemented to improve and harmonize these standards. Following the summit, the teams have both developed reports summarizing recommendations on how to better harmonize design standards across borders.

ADDITIONAL PROJECTS COMPLETED IN 2020:

- Architectural Student Design Competition – Penn State University
- Federal Highway Administration Full-Scale Freeze/Thaw Durability Comparison Assessment -NCMA
- Freeze-Thaw Durability of SRW Units with Crumb Rubber Aggregate
- Student Design-Build Competition – Penn State University
- Architectural Student Design Competition – Ball State University
- Non-destructive Evaluation of Manufactured Concrete Units – NCMA
- Architectural Student Design Competition – Bowling Green State University
**FINANCIALS**

**REVENUES**

- **Contributions**: $2,200
- **Investment Income/Realized Gains**: $451,276
- **Unrealized Gains/Losses**: -$756,379
- **Other**: $480

**2020 TOTAL**: $1,210,355

**EXPENSES**

- **Administrative Expenses**: $69,271
- **Program Support Expenses**: $87,382
- **Program Grants & Scholarships Awarded**: $257,131

**2020 TOTAL**: $413,784

**NET ASSETS (in 000s)**

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Assets, Beginning of the Year</td>
<td>$8,892</td>
<td>$7,808</td>
</tr>
<tr>
<td>Net Operating Revenue</td>
<td>$797</td>
<td>$1,084</td>
</tr>
<tr>
<td>Net Assets, End of the Year</td>
<td>$9,688</td>
<td>$8,892</td>
</tr>
</tbody>
</table>

Note: The 2019 amounts represent those in NCMA Foundation’s audited year-end financial statements. The 2020 amounts are preliminary and subject to change pending audit.