

# From the Desk of Maysoun Ismaiel...



Maysoun Ismaiel, Ph.D., E.I.T., Masonry Design Co-ordinator, Canada Masonry Design Centre - Saskatchewan Office

Incorporating sustainability initiatives into Canada's energy codes reflects a proactive approach to promoting sustainable building practices. These actions have positioned Canada to achieve higher energy performance standards and contribute to a greener, more resilient built environment.

Masonry is a pivotal contributor to the cultivation of sustainable construction practices within the industry. Masonry materials, such as bricks and concrete blocks, epitomize durability, weathering a spectrum of environmental conditions and thus minimizing the need for frequent repairs and replacements. This enduring quality fundamentally underpins a building's sustainability. Additionally, masonry provides exceptional thermal mass characteristics, adept at absorbing, storing, and gradually releasing heat, which in turn regulates indoor temperatures. This reduction in the demand for heating and cooling systems not only underscores the importance of energy efficiency but also contributes to a substantial decrease in overall energy consumption. Masonry walls further excel in insulation properties, particularly when combined with proper insulation materials. This synergy not only maintains consistent indoor temperatures but also diminishes reliance on HVAC systems, thereby lowering energy usage. Furthermore, recently there have been many initiatives and plans for producing masonry from recycled materials, which are often locally sourced. This strategic shift reduces the environmental footprint related to material transportation and the extraction of new resources. Also, innovations within masonry technology have introduced novel sustainable building practices, such as insulated concrete blocks that can significantly enhance energy efficiency, thereby augmenting the overall sustainability of masonry construction.

Incorporating sustainability into masonry construction practices invariably requires a multifaceted approach, encompassing material selection, design strategies, and construction techniques. Architects, engineers, contractors, and developers, working collaboratively, can maximize the environmental benefits masonry grants upon building projects. In this way, masonry assumes a pivotal role in promoting and enacting sustainable building practices within the masonry construction industry.



SMI and CMDC are dedicated to keeping local design and construction communities well-informed about the latest sustainability initiatives and innovations within masonry technology and the industry. Our approach to realizing this mission hinges on the organization of a dynamic series of seminars and events with the primary objective of disseminating current knowledge about the recent standards and market updates related to sustainable masonry practices in construction. We also aspire to provide valuable guidance on how masonry can be employed to effectively bolster the adoption of sustainable building practices in the construction sector. Let's team up to create a more sustainable and resilient future for our built environment.



ConEx: The Builders Expo event September 28, 2023, Prairieland Park - Saskatoon. Maysoun Ismaiel (left); Ryan Winkler -Brxton Masonry (right)

As masonry construction continues to grow, SMI remains committed to advocating for the local masonry industry and advancing the adoption of masonry systems. Throughout the year, SMI has supported various initiatives aimed at promoting masonry, including the 2023 Heritage Awards, the ACEC-SK Awards of Distinction, and the Claybank Brick Plant Historical Society (CBPHS). Additionally, SMI member, Brxton Masonry Inc., has played an

active role in contributing to and supporting events like ConEx: The Builders Expo, which stands as Saskatchewan's inaugural non-residential construction trade show and conference, boasting over 100 exhibitors showcasing cutting-edge products and services.



Green team; PCL Construction Management Inc., Pink team; BFL Inc.

Furthermore, our members supported and actively engaged in the Young Executives: Amazing Race, an initiative by the Saskatoon Construction Association that saw participation from more than 15 different architectural, construction, and engineering firms. This event was hosted and sponsored by the City Masonry Group Ltd. This event provided participants with hands-on experience in brick wall construction



Dominic Iula, President City Masonry Group Ltd. and the Grey team; Flynn, KONE, aodbt, and Wright



and provided the participants with essential skills related to bricklaying, including the ability to handle and lay bricks, mix mortar, level and plumb walls, and finish joints properly, all within a fun and challenging atmosphere.



Dominic Iula, President City Masonry Group Ltd. and the Blue team from 3twenty Modular

These team efforts are making great progress in promoting masonry, and SMI members wholeheartedly endorse and support hands-on construction experience. It not only equips participants with practical skills and personal and professional benefits but also boosts the quality and safety of construction projects. Whether you're exploring a construction career or simply improving your skills, participation in hands-on activities is incredibly valuable. Plus, there's the personal satisfaction that comes with successfully building a brick wall, whether it's for your own use, part of a bigger project, or just for the sheer fun of it!

The CMDC remains dedicated to bridging the gap between the design community and the masonry construction industry. The CMDC mission involves providing technical support to design professionals and pushing the boundaries of Masonry Design. In addition to our core responsibility of addressing masonry-related technical inquiries from design professionals across Canada and furthering the development of MASS software, the CMDC team has been diligently engaged in several pivotal initiatives. Here's a glimpse into the latest developments at CMDC:

- Commencing in January 2024, a CMDC office will officially open its doors in Vancouver, fully in line with CMDC's agreement with the two British Columbia Masonry Contractor Associations, MCA of BC, and CMCA-BC & Yukon. This represents yet another significant stride in CMDC's journey towards becoming a national association.
- The next edition of the Masonry Structures Behaviour and Design Textbook is finished. The entirety of the textbook is complete from both a technical standpoint and finalized in its publishable form. The new edition of the textbook will be printed in hard copy form in the next couple of months.
- CMDC, in partnership with CCMPA, organized a one-day Masonry Design Clinic at the Hockley Valley Resort in Ontario. This exclusive course was tailored to engineers in the Greater Toronto Area (GTA) and featured a diverse agenda. The day commenced with a distinguished guest speaker from McMaster University, who delved into the latest advancements in masonry research. Following the insightful presentation, participants engaged with the CMDC team for a hands-on session, where they received valuable tips and tricks for designing low-rise post-disaster masonry structures. This event also served as a soft launch for the new edition of the textbook. CMDC staff provided a sneak peek into the enhanced features of the book, highlighting a more



comprehensive design example for a low-rise post-disaster masonry structure.



Masonry Design Clinic event, Bennett R. Banting, Ph.D., P.Eng. Director of Technical Services, Engineered Masonry

 The CSA S304 has completed the public review phase, and the CMDC team is now fully committed to addressing the comments received during this phase. We anticipate that the updated CSA S304 will be published by mid-May 2024.



Masonry Design Clinic event, Brad Crumb, P.Eng., Masonry Design Engineer

 We're excited to announce the upcoming launch of the updated CMDC website in December. The new updates will feature fresh specifications and resources, a dedicated section for simplified veneer and partition wall design in line with the current CSA S304 updates, and valuable insights into the latest edition of the Masonry Structures Behavior and Design Textbook, the MASS design software, and much more. Stay tuned for all these exciting additions!

The CMDC is arranging for the upcoming CMCA conference planned in The Westin Beach Resort and Spa at Frenchman's Reef, St. Thomas February 25 - 28, 2024. Besides that, CMCA conferences are a great opportunity to connect with



Masonry Design Clinic event, Gurparam Kang, M.ASc., P.Eng., Masonry Design Engineer

professionals in the masonry industry and build valuable connections. The conference venue is nestled in paradise, offering you the opportunity to learn and relax in a picture-perfect tropical setting while enjoying memorable social gatherings and exciting activities. This is a great chance to enhance your knowledge, broaden your network, and soak up the vibrant atmosphere of St. Thomas. The CMDC staff is looking forward to welcoming you to the CMCA conference in St. Thomas!



#### **SMI's Annual Golf Tournament - Riverside Country Club**

Wow, was it a scorcher with temperatures nearing 40°C with the humidity! Despite the heat, we had a great turnout, as usual. The day started with a burger and beer at The Hut supplied by SMI, followed by a shotgun start. City Masonry sponsored a candy bar and refreshments on hole nine as well as a putting competition. After 18 holes, the golfers returned to

the clubhouse where prizes were awarded and dinner was served (and some much needed air conditioning!). The evening was capped off with speeches and prizes donated by SMI and its members. A big thank you to Brxton Masonry and City Masonry for sponsoring the bar. We look forward to seeing you next summer!





#### **SMI's Annual Golf Tournament - Royal Regina Golf Club**

Another beautiful day for a golf tournament at the Royal Regina Golf Club. The day began with a BBQ burger and beer supplied by SMI followed by 18 holes of golf. After golf was completed, the golfers gathered in the clubhouse for cocktails and appetizers. The evening continued with speeches and prizes donated by SMI and its members. A big thank you to Brxton Masonry and City Masonry for sponsoring the bar. Planning has already begun for 2024's tournaments - we look forward to seeing you next summer!





### Canada Masonry Design Centre Resources

The CMDC's scope extends far beyond providing expert technical assistance. We offer a diverse array of tools and resources tailored to benefit designers, contractors, and architects. Some of these valuable resources include the Second Edition of the Engineering Textbook - Masonry Structures: Behaviour and Design. This comprehensive masonry design guide is a significant asset. It features technical background information and relevant examples.

The second edition of this book was specifically designed for Canadian masonry designers. It incorporates numerous improvements over the first edition to enhance the value it provides to those seeking masonry design resources. Notably, the content has been updated to reflect changes in CSA S304 from the 2004 to 2014 editions. Additionally, the chapters have been re-ordered, re-written, and now offer a significantly different perspective compared to the first edition.

Our goal was to realign the content with current design practices and integrate it better with other resources that CMDC offers, such as the MASS design software and our educational courses and seminars. Since the release of the first edition, CMDC has diligently addressed a multitude of technical inquiries and received extensive feedback from the design community and university instructors.

We have strived to build upon the exceptional work of the first version and present an improved product to cater to both new users of the book and those who are already familiar with the first edition. This updated edition reflects our commitment to provid-



ing top-tier resources that bring value to the masonry design community. We hope these enhancements make the book even more valuable to all users.

Another resource provided by CMDC is the MASS Design Software. This powerful tool streamlines and expedites the engineering process, delivering results in seconds! Developed in collaboration with CCMPA, and backed by our members, MASS represents a groundbreaking design tool available to structural engineers. It is a comprehensive design software package tailored to meet the requirements of the National Building Code of Canada and CSA S304: Design of masonry structures. By leveraging MASS, engineers can effortlessly and accurately design masonry structures.



For more information about the CMDC resources visit our website https://www.canadamasonrydesigncentre.com/



# **Ron Chelack Retirement**

Earlier this year, the SMI membership bid farewell to longtime SMI board member and Vice President, Ron Chelack, as a result of his retirement from the masonry industry.

Ron's journey in the masonry industry spanned several decades during which he played a pivotal role within the SMI board. His consistently insightful and



SMI's Annual Golf Tournament -Riverside Country Club 2023



SMI's Design Awards 2017

well-considered opinions were highly esteemed by his fellow board members, and his contributions were pivotal in shaping SMI's current success.

As Ron embarks on this new chapter of his life, the SMI members wish him a happy retirement where he can spend time with family and enjoy his hobbies!



SMI's Annual Golf Tournament -The Willows Club 2005



SMI's Annual Golf Tournament -Riverside Country Club 2013



SMI Executive - date unknown



### What Are Net Zero Buildings?



Two primary categories of net-zero buildings exist net-zero energy buildings and net-zero carbon buildings. Net-zero energy buildings are designed to minimize energy consumption to the point where on-site renewables can compensate for the energy used. The primary goal here is not specifically reducing carbon emissions, but rather the byproduct of lowered emissions as energy loads decrease. These buildings have their own renewable energy sources, which mitigate the demand for non-renewable energy, subsequently reducing carbon emissions. On the other hand, net-zero carbon buildings are more challenging. They not only aim for minimal energy usage but also count carbon emissions in lieu of kWhrs. These buildings generate on-site, carbonfree, renewable energy, effectively offsetting both operational and embodied carbon emissions. While much of the industry currently concentrates on operational carbon, there's a growing awareness of the need to address embodied carbon in construction materials and practices.

Operational carbon, which relates to energy usage, is included in some net-zero building codes, whereas embodied carbon, associated with the manufacturing and transportation of building materials, is an

emerging consideration. Presently, there are no widespread restrictions on embodied carbon. Although many codes currently lack specific guidelines for embodied carbon, the Pan-Canadian Framework on clean growth and climate change is pushing for widespread adoption of net-zero energy-ready standards by 2030. The framework acknowledges that building codes must accommodate regional variations and climatic conditions. The plan is for provinces to adopt net-zero energy-ready codes by 2030, aiming for full-scale net-zero energy construction across all buildings by 2032. The emphasis lies in enhancing the energy efficiency of new constructions, with federal, provincial, and territorial governments collaborating to develop and implement more stringent model building codes. These codes will be adjusted to address regional differences, ultimately promoting sustainable and energy-efficient construction practices nationwide.

Incorporating net-zero principles into masonry buildings is a feasible and ambitious goal. It requires collaboration among various stakeholders, including architects, engineers, contractors, and building owners, to align design, construction, and operations with sustainability and energy efficiency goals. Achieving net zero in masonry leads to reduced energy use and lower carbon emissions, contributing to a more sustainable built environment. Advancements in technology and understanding make even greater efficiency and carbon neutrality in masonry construction increasingly achievable, all aimed at creating a more environmentally friendly and promising future for the masonry industry.



# Saskatchewan Centre for Masonry Design



Left to right: Maysoun Ismaiel, Masonry Design Co-Ordinator, Canada Masonry Design Centre - Saskatchewan Office; Micah Heide, M.Sc. Civil Engineering student - University of Saskatchewan; Dr. Lisa Feldman, Department Head and Professor, Civil Geological and Environmental Engineering; Will Pahl, undergraduate Civil Engineering student - University of Saskatchewan

The CMDC team is committed to providing unwavering research support and fostering seamless coordination with the Saskatchewan Centre for Masonry Design (SCMD). In June 2023, CMDC staff, and the University of Saskatchewan students, had the privilege of attending the 14<sup>th</sup> NAMC in Omaha, NB.

During the event, Micah Heide, an M.Sc. civil engineering student at the University of Saskatchewan, under the supervision of Dr. Lisa Feldman, presented his research entitled "Influence of Web Geometry on Concrete Masonry Walls Subject to Out-of -Plane Loading." In addition to his engaging presentation, he contributed a poster showcasing his findings.

Moreover, Will Pahl, an undergraduate civil engineering student at the University of Saskatchewan, took part in the 5-Minute Masonry Talk Undergraduate Student Competition, where he presented his summer project on testing masonry prisms. We are delighted to announce that Will won the 3<sup>rd</sup> place prize in this competition. Please join us in extending our heartfelt congratulations to Will for this remarkable achievement!



The University of Saskatchewan students not only delivered outstanding presentations but also made significant contributions to the conference. Their active participation in professional networking events associated with the conference led to academic recognition and enriched interactions with fellow researchers, industry experts, and professionals. These interactions have facilitated the exchange of ideas and the establishment of invaluable connections that will undoubtedly shape their academic and professional journeys.

Let us pause for a moment to celebrate the remarkable achievement of Dr. Lisa Feldman as she assumes her new role as the Department Head of Civil, Geological, and Environmental Engineering at the University of Saskatchewan. Dr. Feldman, congratulations on this highly deserved appointment!

Dr. Lisa Feldman is the Director of the Saskatchewan Centre for Masonry Design, with her research pursuits encompassing the mechanics and behaviour of reinforced concrete and masonry components and structures, the assessment and restoration of existing structures, and the calibration of building codes. Her research has had a profound impact, leading to significant changes in CAN/CSA S304-14, the Design of Masonry Structures.



Dr. Lisa Feldman, Department Head and Professor, Civil Geological and Environmental Engineering

SMI gratefully acknowledges Dr. Feldman's invaluable contributions to the field of Masonry. We extend our best wishes to her as she embarks on this exciting new chapter in her illustrious career!



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