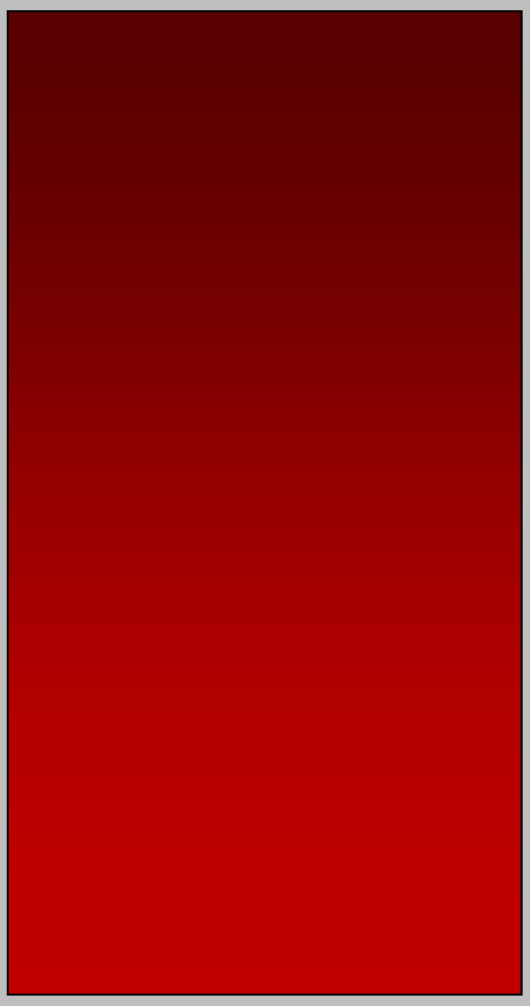
the edmonton Specifier

Construction Specifications Canada is an organization representing diverse interests in the construction industry and related professions. It is dedicated to improving the quality and flow of information between these interests, whether in the form of specifications, contract administration or marketing.

November 2024 Edition

Editor: Tracey Stawnichy

In This Edition...



Recent Changes to the Construction Lien Act

Date: Thursday, November 21, 2024
Time: Noon – 1:00pm
Place: Matrix Hotel, 10640 – 100 Avenue NW, Edmonton, AB T5J 3N8
Presented by: Kevin Magill, PQS, MRICS, Dip Arch, MSc Constr Law

Kevin has worked in the built environment and project management fields for over 35 years, and has used his extensive construction industry experience, gained interacting with diverse cultures in Canada, USA, Caribbean, Europe and South Africa, to deliver successful capital building projects. Kevin's sector list included public works, healthcare, education, energy (oil & gas), industrial, commercial and residential projects. Kevin is current vice president of Canadian Association of Consulting Quantity Surveyors (CACQS), a member and former board member of Prairie Chapter Region for the Canadian Institute of Quantity Surveyors (CIQS), a member of Royal Institute of Chartered Surveyors (RICS), a board member of Alberta Arbitration and Mediation Society (AAMS), and a member of both the ADR Institute of Alberta (ADRIA), and the ADR Institute of Canada (ADRIC).
https://www.eventbrite.ca/e/lunch-and-learn-changes-to-the-construction-lien-act-tickets-1071149630379?aff=oddtdtcreator

2024 Edmonton Chapter Executive

Director	Andrew Brassington	780 222 6732
Chairman	Dylan Leclair	587 335 9552
Vice-Chairman	Abby Sharpe	780 953 2950
Secretary	Jessica Prosser	587 340 7169
Treasurer	Catherine Osborne	780 423 6606
Architectural	Kevin Osborne	780 717 1007
Chapter Liaison	Position Open	
Education	Position Open	
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General Contractor	Position Open	
Interior Design	Corry Bent	780 995 1647
Manufacturer/Supplier	Mike Lafontaine	780 907 4920
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Trade Contractor	Kevin Kramers	587 232 0613
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Sustainability	Position Open	
At Large	Dave Lawrence	780 901 7260

Advertising Rates

Business Card: April 1 to May 30
Rates cover your ad on our website 24 hours per day, 7 days per week.
Business card on-line:
Annual $100 if received by May 1;
$75 if received by August 1;
$50 if received by November 1;
$25 if received by February 1
Add $50 to have a link to your company web site from the CSC Edmonton Chapter web page.

Chapter Sponsor

New Chapter Sponsor Bundles:
edmonton.csc-dcc.ca/About+Us/Sponsor+Opportunities+-+CSC+Edmonton+Chapter/

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$50 for Individual (personal) Sponsor
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FOR FURTHER INFORMATION

Contact any member of the Executive, attend one of our Chapter Meetings, send your name and address to CSC Edmonton Chapter, PO Box 35093 Mid Town PO. Edmonton, AB T5J 0B7, or go to edmonton.csc-dcc.ca for additional contact information.

GOALS OF CSC

Construction Specifications Canada is a multi-disciplinary non-profit association dedicated to the improvement of communication, contract documentation, and technical information in the Construction Industry. CSC is a national Association with Chapters in most major Canadian Cities.

To this end, CSC pursues the study of systems and procedures that will improve the coordination and dissemination of information relevant to the construction process.
We seek to enhance the quality of the design and management aspects of the construction activity through programs of publication, education, and professional development, believing that by so doing, we can contribute best to the efficiency and effectiveness of the construction industry as a whole.

OBJECTIVES OF CSC

To foster the interest of those who are engaged in or who are affected by the compilation or use any forms of specifications for the construction industry.

To publish literature pertaining to the construction industry.

To engage in activities to improve procedures and techniques related to the construction industry.

Announcements:

Chair's Message

Dylan Leclair, CSC Edmonton | Chapter Chair

Greetings, CSC Edmonton Chapter,

With winter around the corner, we have been working on our program for the 2024-2025 year. I am happy to say that on November 21, Kevin Magill will be offering a presentation on recently introduced changes to the construction lien act, bringing in prompt payment and right to adjudication. You can sign up for the event over on our Eventbrite page.

I would also like to congratulate John Barnes on completing the requirements and becoming the newest CCCA with the Edmonton Chapter.

In closing get those winter tires out and dusted and have a safe winter.

Membership in CSC

Dave Lawrence

In the construction industry's fast-paced environment, the need for and value of Construction Specifications Canada is greater than ever. CSC brings together individuals from all segments of the construction industry. All who have a vested interest in Canada's largest industry are invited to join CSC. When you join CSC, you become part of the only association that brings together professionals from all aspects of the construction industry.

DESIGN TEAM

CSC offers members of the Design Team the opportunity to meet with other members and exchange information. It also affords you the chance to help improve technology and its management, and the means to improve ways in which your ideals are translated into clear, concise, and complete documentation.

BUILDING TEAM

If you are a member of the Building Team, CSC offers you the opportunity to become involved in formulating specifications. Your valuable input into the programs can help generate time and cost savings, as well as improve performance.

SUPPLY TEAM

The multi-disciplinary composition of CSC allows members of the Supply Team to meet with other members of the construction team. CSC programs in data filing and information retrieval are geared to present convenient and concise information on your products for proper evaluation and specification.

THE STUDENT

If you are a student of architecture, engineering, or construction technology, CSC will provide you with a greater exposure to, and a better understanding of, the construction industry, giving you an excellent opportunity if you plan a career in the construction field.

People and Places – Welcome to new and past CSC Edmonton Chapter Members!

Fresh Faces (New Members)

Doug Rutherford
General Manager, Mac Skylights
P: (780) 435-3761
E: doug.rutherford@macskylights.com

Tammy McCarron
Account Manager, Commercial at IXL Building Products
P: (780) 465-4848
E: tmccarron@ixlbuild.com

Yes, We've Moved (Contact / Mailing Address Update)

None this month.

Previous Members Re-Joining / Re-Activated

None this month.

CSC Education:

Position Open

Principles of Construction Documentation

The PCD course is an introductory course that will enable the student to have a better understanding of construction documentation (specifications, drawings, and schedules), products, bidding procedures, and contracts**. It is also a prerequisite to all the other CSC education courses.**

Specifier 1

Specifier 1 is an intermediate level course that will take the individual beyond the concepts previously introduced in the PCD Course. Although some of the same topics are included, the depth of comprehension and explanation exceed that of the PCD course. The Specifier 1 is a prerequisite for the Certified Specification Practitioner (CSP) designation from CSC. Successful completion of the course may be credited toward the experience component requirements for the Registered Specification Writer (RSW) designation.

Technical Representative

The TR course provides a better understanding of contract documents and bidding procedures, product representation, professionalism, and ethics, and will provide a new depth of understanding and explanation of concepts beyond what was previously introduced in the PCD course. The course is designed for the individual involved in the supply section of the construction industry, such as manufacturer representatives, agents, or distributors of products. The student will have successfully completed the PCD course.

EDUCATION COURSES

Upcoming Classes:

Principals of Construction Documentation (PCD) – TBD
Specifier – TBD
Construction Contract Administration (CCA) – TBD
Technical Representative (TR) – TBD

Upcoming Classes Online:

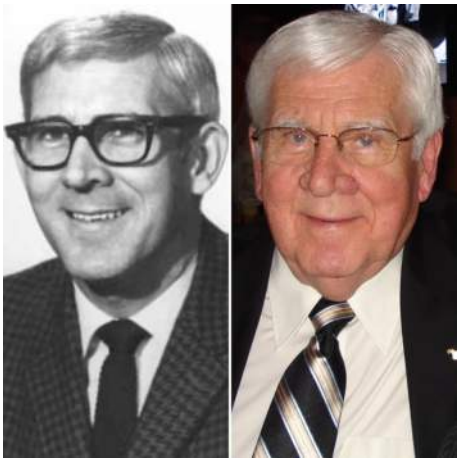
Principles of Construction Documentation (PCD) – January 6, 2025 (14 weeks)
Construction Contract Administrator (CCA) – TBD
Specifier – TBD
Technical Representative (TR) – TBD

Upcoming Virtual Classes:

Principles of Construction Documentation (PCD) – January 10, 2025 (5 weeks)
Construction Contract Administration (CCA) – November 22, 2024 (5 weeks) / March 7, 2025 (5 weeks)
Specifier (SP) – November 1, 2024 (7 weeks) / March 7, 2025 (7 weeks)
Technical Representative (TR) – November 1, 2024 (5 weeks) / March 7, 2025 (5 weeks)

Social Media:

Check us out:



James Findaly, FCSC, CSC Past President
April 6, 1930 - October 5, 2024

It is with profound sadness that we announce the passing of James (Jim) Findlay, FCSC, on October 5, 2024, at the age of 94, following a brief battle with cancer. Surrounded by his loving family, Jim passed away peacefully, leaving an enduring legacy in both his personal and professional life.

Jim is lovingly remembered by his devoted wife of 69 years, Janet (Jenny) Findlay; his daughter, Lisa Pidhirniak (Peter); his son, Michael Findlay (Michelle); his grandchildren, and his treasured great-granddaughters.

Born in Sanquhar, Scotland, Jim completed his secondary education at Dumfries Academy in 1947 before enlisting in the British Army's Royal Engineers. There, he trained as an Architectural Draftsman at the prestigious Royal School of Military Engineering, laying the foundation for a distinguished career in the construction industry that spanned nearly six decades.

As a highly respected Specification Consultant, Jim played a significant role in shaping the Vancouver skyline. His contributions to the design and construction of iconic landmarks such as the Vancouver Law Courts, Pacific Centre, The Vancouver Trade and Convention Centre, Expo '86 Projects, Park Place, and Commerce Place have left an incredible mark on the city's architectural landscape, a legacy that will be remembered for generations to come.

Jim served as President of Construction Specifications Canada (then known as the Specification Writers Association of Canada) from 1970 to 1971 and was elevated to Fellow (FCSC) in 1972. His unwavering commitment to the profession and to the CSC community is a testament to his leadership, passion, and the lasting impact he made on all those who had the honor of working with him.

CSC extends its deepest condolences to Jim's wife, children, grandchildren, great-grandchildren, and extended family, as well as to the entire CSC community. Jim's influence and legacy will continue to inspire future generations in the construction and specification industries.

In lieu of flowers, the family requests that donations be made to the Crossroads Hospice Society and the BC Cancer Foundation.

Kevin Magill, PQS, MRICS, Dip Arch, MSc Constr Law
Construction Consultant and Dispute Resolver
Professional Profile Overview

Core Competencies

Subject matter expertise in all phases of project lifecycle; comprehensive proficiency of construction contracts and contractual documentation; extensive and diverse career experience on variety of project in both public and private sectors; respectful and professional relationship builder, and competent dispute resolver.

Biography

Kevin has worked in the built environment and project management fields for over 35-years, and has used his extensive construction industry experience, gained interacting with diverse cultures in Canada, USA, Caribbean, Europe and South Africa, to deliver successful capital building projects. Kevin's sector list includes public works, healthcare, education, energy (oil & gas), industrial, commercial, and residential projects.

Kevin commenced his career as an Architect before completing post-graduate studies in Project Management and Construction Law facilitating his move into managing a broad spectrum of developments from inception to completion, in an "owners-representative" capacity. As such, Kevin has expertise in both design and execution sides of project delivery and is experienced in all phases of the development lifecycle, including program management, budget establishment, consultant team leadership, contract document preparation, project implementation, contract administration, change management, cost control, conflict resolution, and project closeout.

In 2017 Kevin completed formal alternative dispute resolution training and qualified as an arbitrator and construction adjudicator. Drawing on his wide-ranging experience, and with a with a keen interest in construction law, when not sitting as the dispute resolver on contentious issues, Kevin consults on construction contracts, provides analysis on contractual claims and quantum entitlements, and provides litigation support to construction lawyers, project developers and owners, insurers and surety bonders.

Kevin is current vice-president of Canadian Association of Consulting Quantity Surveyors (CACQS), a member and former board member of Prairie Chapter Region for the Canadian Institute of Quantity Surveyors (CIQS), a member of Royal Institute of Chartered Surveyors (RICS), a board member Alberta Arbitration and Mediation Society (AAMS), and a member of both the ADR Institute of Alberta (ADRIA) and the ADR Institute of Canada (ADRIC).

Education

◊ Diploma Architecture
◊ MSc Construction Law
◊ Qualified Arbitrator
◊ Certified Construction Adjudicator
◊ Umpire under Insurance Act

Professional Designations/Affiliations

◊ Professional Quantity Surveyor (PQS) - CIQS
◊ Royal Institute of Chartered Surveyors (MRICS)
◊ Canadian Assoc of Consulting Quantity Surveyors
◊ ADRIA (Member) – Qualified Arbitrator
◊ ARCANA (AB) – Certified Adjudicator

Articles of Interest

Palestinians Exposed to Deadly Levels of Asbestos in Ruined Gaza, Expert Warns

Sourced from: https://wwwglobalconstructionreview.com / Rod Sweet

Palestinians inspect the damage following an Israeli airstrike on the El-Remal area of Gaza City on October 9, 2023 (Palestinian News & Information Agency [Wafa] in contract with APAimages/CC BY-SA 3.0)

An international expert has warned that Israel's war against Hamas in the Gaza Strip over the past year has exposed many of the 2.1 million people trapped there to deadly levels of airborne asbestos particles, calling it a "death sentence".

Israel's military campaign has damaged or destroyed around half the buildings in the enclave, according to ReliefWeb, citing UN data.

In May, the UN estimated that there were around 800,000 tonnes of asbestos and other contaminates mixed in among 37 million tonnes of debris, which will severely complicate the clean-up.

Asbestos was banned in Israel in 2011, but many older buildings in Gaza will have the material originally valued for its insulation and fire-resistant properties.

When disturbed, asbestos particles can cause various forms of cancer that take years to develop.

UK-based Professor Roger Willey told the Al Jazeera news outlet that airborne concentrations will have been "enormously high".

He said it would be "guaranteed mesothelioma", referring to a common cancer asbestos particles cause in the lining of the lungs or abdomen.

"You've got smashed asbestos pieces on the ground, in the air from the explosion, and people are walking through it and kicking it up all the time, so it'll never come back to a safe environment until it's all cleared away," Willey said.

Grim Lesson from 9/11

After the terror attack on the World Trade Center in New York on 11 September 2001, Willey predicted that more people would eventually die from asbestos-related diseases than in the physical collapse of the towers, which killed 2,977 people, excluding the attackers.

The Centers for Disease Control and Prevention (CDC) estimates that 400,000 people in Manhattan may have been exposed to toxic dust on that day.

As of 2022, more than 26,000 people had developed forms of cancer potentially tied to that event, according to advocacy group Mesothelioma.com. Also as of then, an additional 5,380 people have died, many from diseases caused by exposure to toxins at Ground Zero, the group says.

Willey called it a "death sentence", adding: "That's going to be the same for the people in Gaza."

Space Architects are Preparing for Humanity's Return to the Moon

Sourced from: https//www.dezeen.com / Ellen Eberhardt

This week, leading figures in space architecture will descend on Milan to formally establish the discipline for the first time. Ellen Eberhardt explores what's at stake.

Space-related architecture has seen an explosion in activity over the past few years, with the development of off-earth construction methods, zero-gravity interior design and even a dedicated masters' programme.

Established architecture firms such as BIG and SOM have entered the field, while a host of new specialist players have emerged including Danish design-build practice SAGA, MIT offshoot Aurelia Institute and 3D-printing studio ICON.

Space travel at "inflection point"

SpaceX's Starship is expected to help bring down the cost of space travel significantly.
Photo via Shutterstock

"The big change we're seeing is that even in the last 10 years, the cost to go to space has dropped pretty significantly," Aurelia Institute founder Ariel Ekblaw explained.

During the space shuttle era from 1981 to 2011, the cost of space travel was between $50,000 and $70,000 per kilogram, she told Dezeen.

Starship, the upcoming rocket from Elon Musk's SpaceX company that tested successfully last week, is expected to contribute to bringing that down to as little as $50 per kilogram – allowing outfits like Aurelia Institute to "think way more open-ended about the types of things we could send up there and design".

The dramatic shift represents a moment for space travel that can be compared to aviation in the mid-20th century, when flying went from private or military use to becoming an affordable form of travel for the general public.

"That's kind of the inflection point that we're at now," said Ekblaw.

Another significant driver is the National Aeronautics and Space Administration's (NASA) Artemis programme, which is dedicated to developing and funding technology for longer-term residency on the moon.

This massive project has refocused immediate priorities away from reaching Mars and onto returning

people to the moon for the first time in more than half a century.

The overarching goal is to establish a permanent lunar base in 10 to 20 years, similar to the research facilities found in the arctic or other remote locations.

Architects and designers are now being tapped by institutions such as NASA and the European Space Agency (ESA) to bring a human-centred design approach to space.

As you might expect, it's an endeavour that presents a whole new host of challenges compared to designing habitable spaces on Earth.

SAGA recently completed a prototype moon habitat housed in an adapted shipping container. Photo courtesy of SAGA Space Architects

“What is it that humans need?”

"We look at things like the long-term psychological effects of being in a remote and extreme environment," ICON vice president of building design and performance Melodie Yashar told Dezeen.

"You need to think about the concept of operations, how the crew will operate, how the crew will be able to come and maintain [the habitat] if needed," added Olga Bannova, programme director of the University of Houston's Masters of Science in Space Architecture.

SAGA recently completed a training habitat for the moon funded by the ESA.

Housed in a standard shipping container, the space encompasses four sleeping "capsules" tucked into one wall, a work area at the center and a galley kitchen and lounge area for the crew.

"In these places, style becomes less of a thing," said SAGA co-founder Sebastian Aristotelis. "That was what attracted me – what is it that humans need?"

"We don't have space to give them 1,000 things. We can give them 20 things. What is it that they need? And can we build that for them?"

Of course, the central challenge is fitting all the necessary resources to create a comfortable long-term habitat for humans inside a rocket capable of reaching orbit and beyond.

Some firms, such as Aurelia Institute and ICON, are focusing on how to work with and in opposition to this constraint.

Aurelia is developing a modular system of geometric panels that would drift out of a "giant pez dispenser" and effectively magnetize together in space to create a geodesic dome, providing larger, more comfortable spaces to reside in the Earth's orbit than the International Space Station (ISS).

ICON, working with BIG, is in the process of developing Project Olympus, which involves creating a construction system for the moon using 3D-printing robots.

The team envisions first sending a robot to the moon to 3D-print a landing pad for additional spacecrafts, followed by the construction of a structure for storage, and then the building of inhabitable structures. "It's like a Swiss Army Knife approach," explained Yashar. "Instead of introducing a solution for every type of structure, you're just sending one robot that would effectively be able to print anything on demand."

ICON's ambition is to make this process, including, eventually, the addition of plumbing, electricity and utilities, 100% autonomous, leaning heavily on 3D-printed infrastructure.

According to Yashar, this is motivated in part by NASA's preference for robotic construction on Mars or the moon, where radiation levels are high enough to kill a human in a matter of minutes.

"It's too risky to the crew and to the astronauts," said Yashar. "Even the most basic operations like fixing something outside the ISS take an entire day to do."

"And so the question has been: how can we use robots instead of humans to execute these very big, but also very necessary tasks like creating shelter in space?"

A fully autonomous construction system would also cut back on the materials needed to be sent from Earth, since a robot could instead rely on using moon dust to create a printable substance.

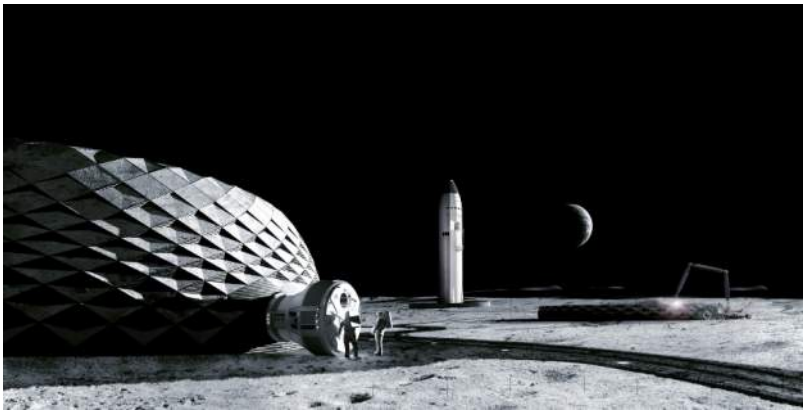
"It's very exciting to think about what you can do with the materials that are already there," said BIG partner Martin Voelkle, who led the design of a doughnut-shaped four-person habitat for Project Olympus.

"Even in the future when it becomes a more regular thing to send a rocket to Mars, it will still be very expensive to bring things from Earth to there."

The moon's lack of pressure poses another design constraint. Structures must be "inflated" – that is, pressurized from the inside – hence the ribbed torus shape of BIG's Project Olympus habitat.

Robots would fill external pockets with lunar soil, or regolith, as an additional layer of protection from the radiation and extreme cold, on top of two-metre-thick walls.

ICON and Big's Project Olympus envisages autonomous robots 3D-printing a doughnut-shaped habitat on the moon reinforced with lunar rubble. Image courtesy of ICON



ISS interior "just designed to be a science lab"

Testing these pioneering construction technologies is another major challenge, albeit a crucial one given the catastrophic cost of failure.

A crew was recently released after living inside BIG and ICON's 3D-printed Mars Dune Alpha Habitat for a year – stationed in a NASA hangar in Houston.

Other designers and architects in the field rely on research on extreme environments, first-hand accounts from those that have been to space, and experiences like Aurelia Institute's zero-gravity flights.

The ambition to send people to space for longer, together with the possibility of non-astronauts making the trip in the not-too-distant future, means a totally different approach to design is needed compared to what has been used in the past.

"Partly why astronauts have to train so much for their missions is that they have to adapt to all of this technology that is new, and everything has been designed by engineers to fit within the parameters of the rocket and the technology, and humans are the last thing to go in there," SOM senior associate principal Georgi Petrov told Dezeen.

"If you're going on a one-week mission, that's fine," he continued. "Highly trained astronauts can survive anything for a week. If you want to spend more time, or send people who are not career astronauts, then you really have to start from the other way."

Astronauts lived for a year inside a prototype of the Mars Dune Alpha Habitat, seen here during printing.

Photo courtesy of ICON.

"You have to start with the humans and think what they're doing, what they're needing, and then make the technology fit around the humans, rather than the other way around."

"The ISS right now, on the inside, is just designed to be a science lab," added Ekblaw. "There's cords everywhere, there's all kinds of really sensitive hardware that if you bump up against it, it's bad for the mission."

"So the next level of design for space architecture needs to be very intentionally thought through."

To ensure standards remain high as space architects navigate all these issues, members of the American Institute of Aeronautics and Astronautics (AIAA) – including Petrov, Yashar and Bannova – will meet for a symposium in Milan this week with the intention of formalising the discipline through a "decadal survey".

"As space architects, we decided to do the same thing as the astronomers and planetary scientists do – to put together a document saying: here's what we think the goals will be for the next 10 years," explained Petrov.

"Nobody's ever done it in space architecture. Now we have enough people that are interested that we feel like we need to help focus energies."

The possibility of making "space architect" a licensed profession is also on the table.

"In most places you have to be licensed to call yourself an architect, and it's a legally protected title," said Petrov. "I don't feel that space architecture is there yet, because we're still in this early phase welcoming new thought and new ideas."

"We're going back to the moon," he considered. "I guess the question on everybody's mind is: is it going to be more permanent?"

Architectural Visualization was Rather Flat: Then We Invented Perspective

Sourced from: https://archinect.com / Niall Patrick Walsh

Before the invention of architectural perspective, architects and artists faced significant challenges in visualizing and communicating architectural space. Without a systematic way to represent depth and spatial relationships, architectural drawings were often symbolic, schematic, or abstract rather than realistic.

From ancient times through the Middle Ages, the ability to convey three-dimensional space on a two-dimensional medium, representing space in a manner satisfactory to the human eye, eluded even the most advanced societies and civilizations – at least, as far as historians know.

Then, in Renaissance Italy, a solution emerged that would change the field of architectural visualization, and of architecture, forever.

Before Perspective

Before the advent of perspective, architectural visualization was rather flat. Those seeking to communicate architectural proposals relied on orthographic projections, diagrams, and rudimentary sketches to represent buildings; methods that, though functional, did not satisfactorily reflect the way the human eye perceives architectural space.

History's earliest architectural drawings, such as those found in Saudi Arabia and Jordan dating to 9,000 years ago, were therefore largely schematic. Sketches and engravings conveyed information about a building's design but were abstract and two-dimensional. More broadly, the study of ancient architectural representation in drawings has proven to be difficult for historians, with limited records or understanding of how even advanced ancient civilizations depicted unbuilt works.

In ancient Egypt, for instance, research suggests that architects and artists were more concerned with the depiction of existing structures rather than proposed works. Elsewhere, eight drawings originally attached to Vitruvius' De architectura, which intended to demonstrate how both the ancient Greeks and Romans undertook draughtsmanship, have since been lost to history.

Medieval art was characterized by a hierarchical scale, where the size of figures and buildings was determined by their spiritual or social importance rather than their physical distance from the viewer.

In the centuries leading up to the Renaissance, the inability to offer a realistic three-dimensional depiction of architectural space on two-dimensional planes persisted. Medieval art was characterized by a hierarchical scale, where the size of figures and buildings was determined by their spiritual or social importance rather than their physical distance from the viewer, or the categorization of objects in paintings into three 'planes' depending on their importance. As a result, compositions appeared flat and lacked realistic depth.

While the Middle Ages did not yield significant advances in how to perceive three-dimensional space through a two-dimensional medium, progress was nonetheless made in other areas of architectural representation. As Archinect has previously reported, new research from the University of Aberdeen suggests that a 12th-century Scottish monk in Paris may have been the first to devise a complete set of architectural drawings as we would recognize such a set today: including several plans, elevations, and sections.

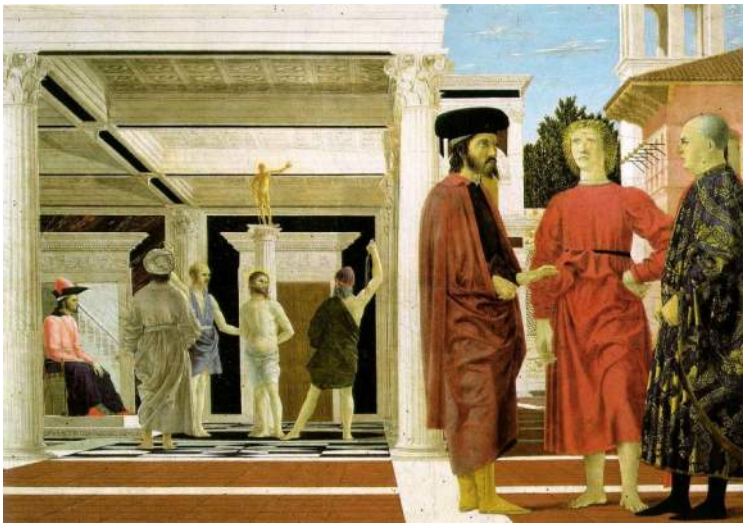
By the Middle Ages, therefore, the viewer could analyze a collection of interdependent orthographic drawings to gain an understanding of the geometries of unbuilt architectural space. However, the ability to fully communicate a building's spatial character, in three dimensions, in a single drawing, remained unfulfilled. In the 15th century, this would change.

The Renaissance and the Invention of Perspective

The Renaissance, particularly in Italy, marked a profound shift in the way architecture was both designed and represented. The central figure in this shift was the architect and artist Filippo Brunelleschi, who readers of Archinect In-Depth: Artificial Intelligence will have met owed to his design of the Duomo in Florence and the many design and construction innovations it heralded.

In approximately 1415, Brunelleschi transformed architectural visualization by introducing a method to depict space in a realistic manner, today known as 'linear perspective.' Brunelleschi's experiment involved painting existing buildings using a mathematical system that accurately represented how the structure would appear to an observer from a fixed viewpoint. The breakthrough allowed artists and architects, for the first recorded time, to represent architectural space in a way that resembled human vision.

Piero della Francesca, The Flagellation of Christ (1468-1470) offers an early example of perspective being used in architectural representation. As can be seen in the image, Renaissance artists began applying perspective principles to architecture before doing so to human figures.



Brunelleschi's method relied on the principle that parallel lines appear to converge as they recede into the distance, meeting at a single point called the "vanishing point." In a one-point perspective, the vanishing point is positioned on the horizon line, directly in front of the viewer. All horizontal lines in the scene converge toward this point, while vertical and perpendicular lines remain straight.

Two-point perspective, meanwhile, uses two vanishing points, typically placed on the horizon line to the left and right. While the one-point perspective excels in drawings where the object faces the viewer head-on, such as a hallway or facade, the two-point perspective is effective for visualizing objects viewed at an angle, such as a corner of a building.

The breakthrough allowed artists and architects, for the first recorded time, to represent architectural space in a way that resembled human vision.

Approximately two decades after Brunelleschi's breakthrough, architect and humanist Leon Battista Alberti would codify the principles of perspective in his 1435 treatise De pictura (On Painting). Under the influence of the writings of Roman architect Vitruvius, Alberti would further expand on the applicability of perspective drawing to architectural visualization through his book De re aedificatoria, emphasizing the importance of geometry and proportion in achieving a realistic depiction of space.

Brunelleschi's observations, and Alberti's codifications, would continue to be built upon in succeeding generations of architects and artists. Piero della Francesca, a contemporary of Alberti, further advanced the study of perspective by applying rigorous mathematical analysis to art. His book De Prospectiva Pingendi (On the Perspective of Painting) delved deeper into the geometric foundations of perspective, with works such as The Flagellation of Christ demonstrating his technique of architectural elements guiding the viewer's eye into the depth of the painting.

Meanwhile, Leonardo Da Vinci expanded upon the concept of perspective construction in famous works such as The Last Supper, where the vanishing point is placed on Christ's right eye, and the perspective is emphasized by his hands, which themselves are set almost parallel to the converging lines. Perspective, in other words, offered Renaissance artists a powerful new technique to achieve the same goal of hierarchy and symbolism that previous generations had strove for. Now, through perspective construction, artists could do so in a medium to satisfy even the untrained artistic eye.

How Perspective Changed Architecture

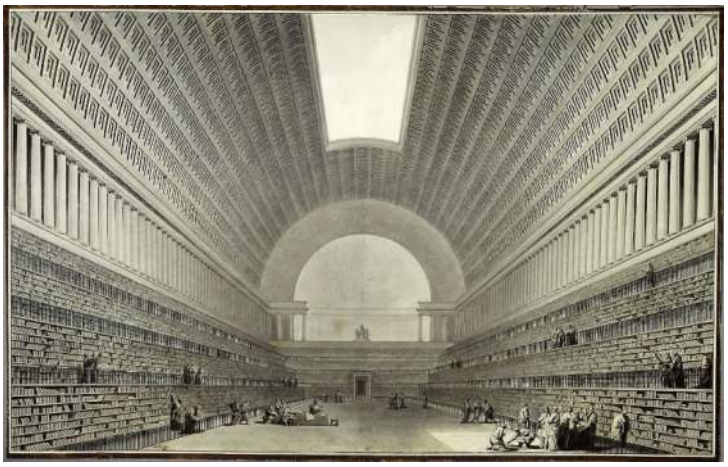
The impact of the invention of perspective on the architectural profession cannot be overstated. As explained earlier, the eras before perspective saw buildings often conceived as collections of individual parts, such as plans, elevations, and sections, rather than as cohesive visual experiences.

With the advent of perspective, architects could now think holistically about how unbuilt proposals would appear in real space, taking into account not only the technical aspects of construction but also the spatial experience of the viewer. Clients, too, could be greater empowered in understanding how their desired scheme would appear, while architects could use perspective drawings to educate and

capture the imagination of the general public, even those untrained in the reading of architectural drawings.

It would not be long before architects began to exploit these newfound abilities. Decades after Alberti's treatise, acclaimed Renaissance architect Andrea Palladio would use perspective drawing to ground works such as the Villa La Rotonda in symmetry and proportion depending on the user's vantage point. Three hundred years later, 18th-century Enlightenment architect Étienne-Louis Boullée would use perspective drawing to capture the public imagination in unbuilt works such as his famous interior perspective of the Bibliothèque du Roi in 1785.

Boullée, Deuxieme projet pour la Bibliothèque du Roi (1785). Image courtesy of Gallica Digital Library



The perspective renderings of Boullée, like those of da Vinci and Michelangelo in the centuries before, aptly demonstrate architecture's ability to straddle the arts and sciences. Such renderings were more than technical documentation of a building, but they were also more than symbolic, abstract depictions of space ungoverned by the laws of reality. Rather, the invention of perspective offered a confluence of artistic beauty and technical precision.

The field of architectural visualization has changed significantly since the eras of Brunelleschi, da Vinci, and Boullée. Nonetheless, the underlying principles of perspective continue to dominate how we conceive of unrealized space. When the 19th century gave rise to photography, the human understanding of perspective gave rise to innovations such as focal length manipulation and the blending of photographs with perspective rendering.

From the early 2000s, meanwhile, an understanding of perspective would allow architects and visualizers to control the characteristics of images in digital modeling software. Even today, where immersive technologies such as virtual and augmented reality move architectural visualization from static pages to responsive headsets, the underlying principles of perspective observed six hundred years ago govern how our spatial experience is constructed.

A two-dimensional window into a three-dimensional experience, perspective ultimately created a portal into the world of the unbuilt. We will never finish exploring it.

Architecture as a Tool for Social Innovation: Human-Centered Design to Combat Loneliness

Sourced from: https://www.archdaily.com / Ankitha Gattupalli

Architecture holds power beyond the creation of buildings - it is a practice that shapes how people live, interact, and thrive within their communities. Architecture can also be a tool for social innovation. Through an understanding of human-centered processes, participatory design, and social sciences, practitioners can address societal challenges such as loneliness, inequality, and public health to equip spaces as vehicles for social equity and engagement. Architecture's role in shaping the future of communities is a direct response to human needs and activated social change.

In A Human Approach to Architecture, a design manual by Oslo-based agency Comte Bureau, the history of architecture and design is explored through key moments highlighting the prospect of addressing human needs and aspirations. In ancient civilizations like Mesopotamia, Egypt, Greece, and Rome, monumental buildings represented cultural identity and civic engagement. The Middle Ages saw a transition from fortified structures to Gothic architecture, nurturing community through open, spiritual spaces. The Renaissance introduced humanism and proportion, while Modernism in the 20th century sought efficiency and social progress but often faced criticism for its impersonal nature.

"Architectural history has been a continuous dialogue between human needs, societal aspirations, and the built environment", shares Partner and Architect at Comte Bureau, Joana Sá Lima. Comte Bureau approaches spatial design through a design-thinking lens, enabling the team to drive innovation through the design of services, organizations, and physical environments. A Human Approach to Architecture was created to provide a practical, hands-on guide for architects and designers to embrace a more human-centered approach in their projects. It bridges traditional design methods with modern challenges, presenting actionable tools to create spaces that manage the needs of people and the environment.

Rebuilding Social Connections

Comte Bureau's SIT - Nardovegen 12-14 pilot project presents a study in human-centered design and its ability to address the issue of loneliness, particularly among university students. "Addressing loneliness requires more than just physical space—it requires environments that foster connection and interaction", Sá Lima states.

Recognizing loneliness as a critical challenge impacting both mental health and academic performance, the project was rooted in participatory design. By involving students directly in the design process, the design team could gather valuable insights into the daily lives and needs of the residents which resulted in empowering the students to contribute to the design of their social spaces. Co-creation assures that designs are responsive to the specific social dynamics of the community they serve.

The design interventions were guided by several hypotheses, rooted in social science and design thinking methodologies. The team believed that communal spaces could play a pivotal role in reducing isolation by sparking spontaneous social interactions. User journeys and behavior maps were used to dive into the idea, providing an understanding of how students navigate and interact with their living environment.

The findings revealed that students preferred multifunctional spaces that blended everyday tasks, such as doing laundry, with opportunities for casual social encounters. By integrating diverse functions into shared areas, the design encouraged students to naturally congregate and interact, reducing the need for forced socialization and creating organic opportunities for connection.

Another key insight was the importance of flexibility and personalization in shared spaces. Through spatial simulations and workshops, students were invited to experiment with different layouts and configurations, using movable furniture and adaptable zones to create communal areas that could serve multiple purposes. These tools helped the design team understand how spaces that are both reconfigurable and user-defined build a greater sense of ownership among residents. When students felt that they could personalize their environment, they were more likely to use the shared spaces regularly, which in turn increased the frequency of social interactions.

The project demonstrates how a combination of participatory design, flexible space planning, and social science-driven insights can lead to environments that promote well-being and community. The

emphasis on involving residents in every step of the design process resulted in spaces that reduced isolation.

Human-Centered Design: Inclusivity, Empathy, and Participation

Inequality within the built environment often manifests as limited access to quality spaces for marginalized communities, reinforcing social divides and perpetuating cycles of poverty. Disparities in housing, public spaces, and infrastructure highlight the urgent need for a more inclusive approach to design. Human-centered design offers a pathway to challenge these imbalances, stressing empathy and a deep understanding of diverse user experiences. Engaging directly with marginalized groups allows architects to create environments that accommodate physical accessibility – like ramps and elevators – and respond to emotional and cultural needs.

Transforming underutilized urban areas into community assets is another powerful way architecture can address inequality. By repurposing abandoned lots and neglected buildings into community centers, parks, or affordable housing, architects can bridge the gap between privileged and marginalized populations. These revitalized spaces provide essential services and foster social cohesion, creating environments where individuals from various backgrounds can connect and share experiences.

At the heart of social innovation is participatory design, which emphasizes the importance of involving communities in the design process. Empowering marginalized groups to contribute their insights, boosts social equity, ensuring that vulnerable populations are considered in the design. Ultimately, participatory design strengthens social ties and cultivates a deeper sense of belonging, paving the way for inclusive environments.

A multi-disciplinary approach, through the integration of architecture, design, and social sciences, is a strong adversary to complex challenges and wicked problems faced by communities. Human-centered design ensures socially conscious architecture where people's needs, well-being, and experiences are prioritized. Amidst technological innovation and global trends, human-centered solutions can enhance the quality of life and foster meaningful connections between people, their surroundings, and our planet.

ASSOCIATION LINKS

- **Alberta Construction Safety Association (ACSA)**
  www.acsa-safety.org
- **Alberta Building Envelope Council (ABEC)**
  www.abecnorth.org
- **Building Information Modeling (BIM) Forum**
  www.insightinfo.com/bimforum
- **Biomimicry Guild**
  www.biomimicryguild.com
- **Canadian Green Building Council (CaGBC)** www.cagbc.org
- **CCDC Documents**
  www.ccdc.org/home.html
- **Architecture 2030**
  www.architecture2030.org
- **BuildingSMART Alliance** (North American Chapter of BuildingSMART):
  www.buildingsmartalliance.com
  BuildingSMART International (formerly IAI)
  www.buildingsmart.com
- **Biomimicry Institute**
  www.biomimicryinstitute.org
- **Canada BIM Council**
  www.canbim.com
- **Canadian Green Building Council (CaGBC) – Alberta Chapter:**
  www.cagbc/chapters/alberta

- **Construction Specifications Institute (CSI)** www.csinet.org
- **International Construction Information Society (ICIS)** www.icis.org
- **OmniClass**
  www.omniclass.ca
  www.omniclass.org
- **Uniformat**
  www.csinet.org/uniformat
- **Institute for BIM in Canada (IBM)**
  www.ibc-bim.ca
- **Construction Specifications Canada (CSC)**
  www.csc-dcc.ca
- **buildingSMART Data Dictionary**
  bsdd.buildingsmart.org
- **MasterFormat**
(https://secure.spex.ca/siteadmin/freedocuments/images/1.pdf)

- **buildingSMART Canada**
  www.buildingsmartcanada.ca
- **Ace BIM**
  www.acebim.ca

ASSOCIATION LIAISONS

Alberta Association of Architects (AAA)
http://www.aaa.ab.ca/

Alberta Painting Contractors Association (APCA)
www.apca.ca

Alberta Wall & Ceiling Association (AWCA)
http://awca.ca

Alberta Roofing Contractors Association (ARCA)
http://www.arcaonline.ca
info@arcaonline.ca

American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
http://www.ashrae.org/ / ashrae@ashrae.org

The Canadian Wood Council (CWC)
http://www.cwc.ca
info@cwc.ca

Portland Cement Association
ConcreteTechnology@cement.org

Interior Designers of Alberta
www.interiordesignalberta.com

Alberta Painting Contractors Association (APCA)
www.apca.ca

Association of Professional Engineers, Geologists, and Geophysicists of Alberta (APEGGA)
http://www.apegga.org/ dward@apegga.org

Association of Science and Engineering Technology Professionals of Alberta (ASET)
http://www.aset.ab.ca/
Russ Medvedev, russm@aset.ab.ca

Building Owners and Managers Association (BOMA)
http://www.bomaedmonton.org/ / edmonton@boma.ca

Consulting Engineers of Alberta (CEA)
http://www.cea.ca/ info@cea.ca

Edmonton Construction Association
www.edmca/.com
contact@edmca.com

Terrazzo, Tile & Marble Association of Canada (TTMAC)
http://www.ttmac.com/
association@ttmac.com

Bulletin Board

Message from the Executive:

We in the Executive are looking for creative-minded individuals who can take on a position and follow through with ideas…if this is YOU, send a message to information@cscedmonton.ca and we will be quick to get back to you!

Open Positions Include:

Chapter Liaison
Sustainability
Contractor's Rep

You don't need to be a member of the Committee to come and participate in our monthly Chapter meetings but watch out if you do! You may find yourself holding a position…maybe even as Chapter Chair…

The Executive

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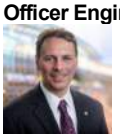
Officer Engineer  Jamie Murphy, RET, P.L. (Eng), CCCA, LEED AP, Principal Read Jones Christoffersen P: 587-745-0266 JMurphy@rjc.ca	**Officer Interior Design**  Corry Bent, DID, BA Design Bent Perspectives cbent@shaw.ca	**Officer Contractor**  Position Open	**Officer Manufacturing**  Mike Lafontaine Expocrete P: 780-962-4010 Mike.Lafontaine@oldcastle.com
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