buildingSMART International

Annual Report 2019

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Chairman's Welcome

Dear members of our buildingSMART community,

I am delighted to welcome you to the 2019 buildingSMART Annual Report.

This report highlights our progress and accomplishments for the truly remarkable year of 2019.

I also want to highlight the progress being made in our Chapter community. Chapters face their own unique challenges, and chapter leadership is a special responsibility. It is now more important than ever for us to build our chapter strength together. The built asset industry needs our global network of chapters to support digital transformation more than ever, and in the future, we must extend our chapter network to new countries as this demand continues to grow.

I also want to make a special mention to our Strategic Members and major client stakeholders. Many of you have been with us on this journey for 5 or more years and I wish to thank you for your trust, support, and persistence. With your help we have made great progress together--first by becoming good friends and collaborators--then by productively working together on shared goals.

Finally, I wish to thank Richard Petrie and his extremely capable team of Richard Kelly, Aidan Mercer, Léon van Berlo, Jon Proctor, Claire Whittaker and Sheila Kerai-Lum for their vision, energy and leadership to unify our strategies, clarify our vision and support our goals.

We have made great progress in 2019 and I look forward to working with everyone towards more progress in the coming years!

Best regards,

Patrick MacLeamy
Chairman
buildingSMART International

Chief Executive - Year in Review

As I write this review, we are all locked down around the world as a result of the Coronavirus pandemic. The current situation seems quite surreal and 2019 from an 'other' world of some sort. 2019 was all the same a tremendous year of growth and success for buildingSMART and that should not go unreported.

Firstly, I wish to extend my sympathy and support for those in our community directly affected by the virus, many families and businesses are suffering in major ways which will not be easily overcome. From the perspective of our goal to fully enable open digital ways of working for the built asset industry I believe that the pandemic is forcing a greater realisation of the importance of our mission which is some small positive in this disrupted world

Turning back to 2019. As I mentioned in my end of year update it was a personal milestone year for me;

- With recruitment of our Technical Director, Léon van Berlo, I feel we now have the minimum viable core leadership team.
- Our major key standards projects (Bridge, Rail with Road in its final furlong) have delivered formal Candidate Standards for public comment,
- Our investment in partnerships has helped deliver broader engagement and working solutions particularly with GS1 and ODA. I'm delighted at the progress with these partnerships which have really flourished and look forward to new opportunities with bodies such as the International Cost Management Consortium.

These were on top of our continuing achievements in respect of successful summits (thank you to China and Germany), the addition of new Chapters (Poland, Hong Kong and Turkey), the growth in our membership base (particularly from the vendor industry this year) and the steady improvement in the leadership and activities within our Solutions and Standards program and the Compliance Program.

The Awards have been well received and provide much needed Case Study materials. Our regular newsletters have highlighted much progress and acted as a channel for engagement. They are also communicated through our growing online channels and community and I encourage you to join in the ongoing discussions. The aim of our communications is to keep everyone informed of all the activities and progress we've made.

Looking ahead to 2020, I foresee another exciting and challenging year. I am looking forward to further developing and communicating the Value of Open Standards and Solutions messages and ask you to join in that work. We are working on a Technical Road Map which we expect to be invaluable to our planning.

Refocussing on standards implementation and delivering a viable ecosystem for users will be a new phase. We hope to welcome new initiatives for the Power and Digital Supply Chains communities and anticipate further growth in the Chapter network.

"Looking ahead to 2020, I foresee another exciting and challenging year. I am looking forward to further developing and communicating the Value of Open Standards and Solutions messages and ask you to join in that work."

Richard Petrie

Chief Executive
buildingSMART International

Connecting Stakeholders to Value

The Value of Open Standards

The value of open standards is far reaching and considerable. buildingSMART International has been helping the community to realise these values with the work it delivers, through the inherent open nature of the organization. International open digital data-sharing standards are critical to the digital transformation in so many organizations. As the industry's strategic insurance policy, buildingSMART helps firms to ensure data formats are non-proprietary and open.

These open data formats enable:

- **Architects, engineers and constructors** to manage data across broad portfolios of projects. Delivering work on time and on budget ensures effective project delivery. Collaborating with other project stakeholders is a business imperative that spans multi-disciplinary activities.
- **Owner-operators and public authorities** to take better control of their data and assets. It is critical that they have flexibility in a preferred choice of software applications. They can take advantage of more predictable costs and schedules and standards-based as-built deliverables that are used in ongoing operations and maintenance for better value outcomes
- **Facility managers, maintainers and operators** to make better decisions with better access to information sources including accurate static and dynamic data
- **Product manufacturers and assemblers** to improve market access and deliver efficiencies throughout the value chain
- **Software vendors** to benefit from standardized processes to significantly increase their market opportunities and gain access to working projects.
- **Educators and students** to take advantage of standards-based curricula that are in-demand in the infrastructure and building industries.

In summary open digital ways of working deliver:

- **Flexibility** of choice of technology creates more value to all stakeholders
- **Sustainability;** helps future proof your business and control your digital destiny
- **Efficiency;** is realized by enabling a digitalization in your organization
- **Access** to new and international suppliers and markets
- **Opportunity** for financial performance improvement delivering short and long-term benefits

IFC Mandates

In the last few years, many organizations from around the world have been mandating the use of IFC. This has been important because it shows the true value of an open standard but also highlights the significance it can have for the industry. There were a couple of notable mandates in 2019:

- AASHTO published IFC resolutions
- Swedish Transport Agency publish BIM and IFC Roadmap
- General Services Agency mandates use of IFC
- Swiss Railway (SBB) mandates the use of IFC
- The U.K. recommends use of IFC in Interoperability Report

These mandates are part of a growing awareness for the importance and value of IFC. All those connected to these organizations are finding better ways of working and projects and assets will benefit as a result.

Digital Twins

buildingSMART International has been working with some Strategic Members and the industry to develop a clear vision statement. This hot topic is being driven by buildingSMART International to clearly define what it means and what role buildingSMART can play. The working group will deliver a positioning paper and open the group to more of the community in 2020.

"Open standards enables better decision-making, allowing organizations to save costs, improve quality and be more sustainable"

The buildingSMART Core Programs

Solutions and Standards

Compliance

User

Solutions and Standards Program

Summary

The Solutions & Standards Program had a productive 2019 and continues with a good output in 2020.

Underpinning the success is the establishment of strong community leadership supported by a robust process and governance structure defined by the bSI Process. All activities in the Program follow the bSI Process, and they are managed within specialist domains, called Rooms. Activities define standards, toolkits or reports that are delivered through projects overseen by the Room Steering Committees.

buildingSMART has its world-renowned Industry Foundation Classes (IFC) Standard which is ISO certified. The ISO 16739 standard was published in 2013.

The projects that are delivering extensions to the IFC Schema for Rail, Road, Bridge, Ports and Waterways have now delivered to Candidate Standard level. This is the culmination of two years' work supported by dozens of infrastructure companies and their employees.

bSI has also published several Technical Reports.

- The Benchmarking of Railway clients gives a useful insight into the expectations and future plans
- The Geo referencing report and Analysis of IFC, CityGML and LandInfra report informs about the relationships between building and landscape standards

The bSI community met at International Standards Summits in Dusseldorf and Beijing during the year. Attendance levels continued to grow with 750+ in Germany and 1500+ people in China. The Solutions & Standards Program specialist Rooms each held two days of working sessions on the activities in their portfolio.

"Underpinning the success is the establishment of strong community leadership supported by a robust process and governance structure defined by the bSI Process"

Solutions and Standards Program

Governance and Leadership

Each Room has a Steering Committee made up from industry representatives who create the Room long-term roadmap. They oversee the delivery of projects that respond to that roadmap and hence meet the requirements of that industry sector.

The Room Roadmaps and the Project Plans, that will deliver new solutions and standards, have to consist of a balanced approach to ensure that the functional needs are met, as well as meeting the requirements for quality, longevity and relevance.

Emphasis has been put into improving the knowledge and leadership ability of the Steering Committees.
The Airport Room now has representatives from airports in Asia, China, the GCC, Europe and the United States. The Product Room and the Technical Room both have a refreshed team.

The bSI Process continues to be enhanced and the latest iteration is published with addendums detailing organization roles and responsibilities, communication workflows and project management process definition. The web based platforms that support project management and information flow have been rolled out across the program and training delivered in their use to ensure efficiency and conformity.

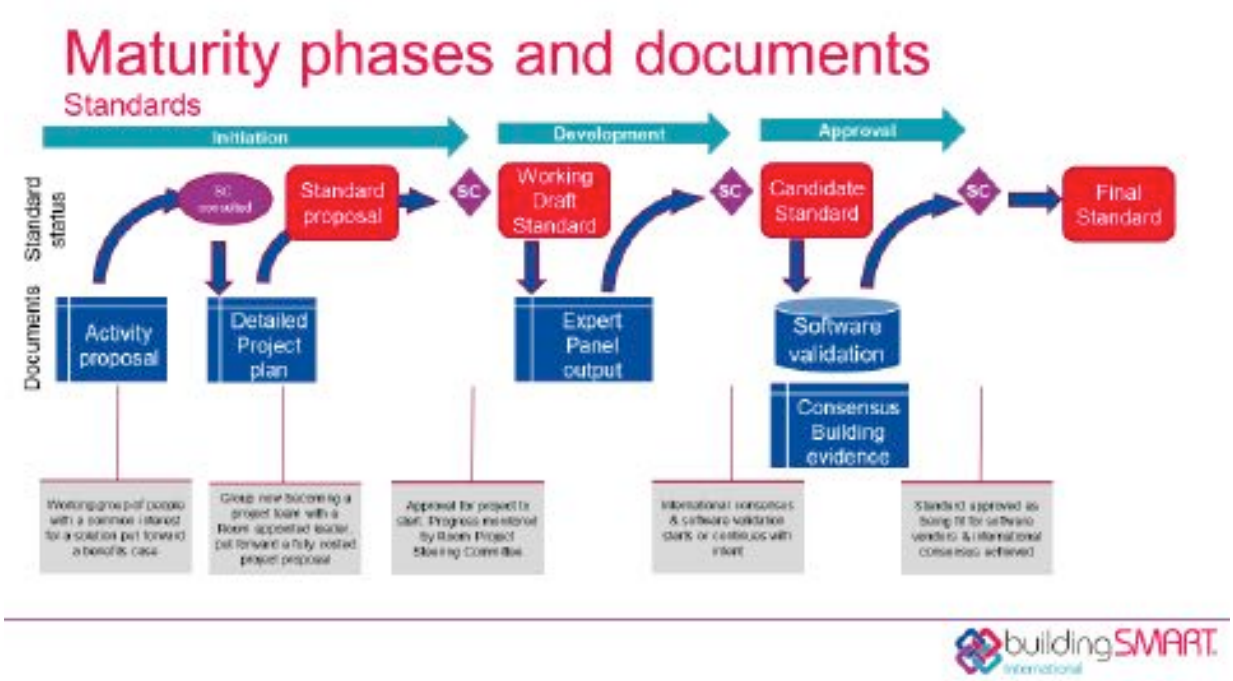
The arrival of the new Technical Director has enabled the improvement to the technical development and maintenance disciplines. The new Technical Room Steering Committee is focusing on activities to deliver the core technology that other Rooms require for their projects to deliver viable output.

A Technical Services working group is formed to oversee the management and maintenance of existing tools and standards. The remit of the Standards Committee Technical Executive has been improved to enable more evaluation of the technical output of each project.

The Rooms are trialling a new use case management tool to improve the capture of exchange requirements, which is an essential first stage in the development of a new standard. They are also being given better specification by the Technical teams on the scope of essential aspects to be included in a new standard's project plan to ensure core functionality and ability to be deployed.

Strategic workshops with ISO have finalized the workflow arrangements so that bSI Standards can smoothly become ISO standards at the correct point in time and expectations regarding when engagement takes place and copyright issues are met. Room Steering Committees have also appointed ISO liaison representatives to ensure effective engagement.

Solutions and Standards Program



The bSI Process

Standards Committee Voting

The Standards Committee consists of representatives from every member and Chapter and is the senior body overseeing that the bSI Process has been correctly followed to ensure international consensus.

They have been asked to vote on the following:

- openBIM standard for **Fire Safety** – Activity proposal
- **IDM Toolkit** – Project plan
- **IFC Tunnel** – Project plan
- openBIM standard **Quantity Take off** – Candidate Standard
- **IFC Bridge** – Candidate Standard
- **IFC Rail** – Candidate Standard
- **IFC Infra Extensions**; harmonising Road, Rail, Bridge, Ports & Waterways – Candidate Standard
- **Analysis of IFC, CityGML and LandInfra** – Final Technical Report
- **Automated Rule checking** – Final Technical Report

International Standards

The IFC Rail project with a EURO €5 Million commitment delivered to Candidate Standard. This project includes contributors from several international rail operators and is now about to launch phase 2. Phase 2 is to get the 38 use cases, defined in phase 1, into software as well as extending the IFC further into earthworks, drainage and cabling.

IFC Bridge also delivered to Candidate Standard. IFC Road and IFC Ports & Waterways have delivered their UML conceptual models to Candidate Standard and were published jointly

The IFC Infra Extension Candidate Standard; Road, Rail, Bridge, Ports now goes forward as a joint deployment project and will include input from the Rail domain.

These projects are concentrating on software validation. Both are incorporating certain aspects of the Technology Strategy roadmap. In parallel the core technology roadmap elements are being developed which will ensure better modularity and therefore allow the specific industry sectors to access the standards that they require.

For a full list of bSI Standards, Candidate Standards and Technical Reports please visit:
https://www.buildingsmart.org/standards/bsi-standards/standards-library

Airport Room

Core Mission

The mission of the Airport Room is to develop and deploy open digital standards for the airport environment. The unification of digital airport standards will enable more efficient working from the common supply chain and create a uniform approach for the industry.

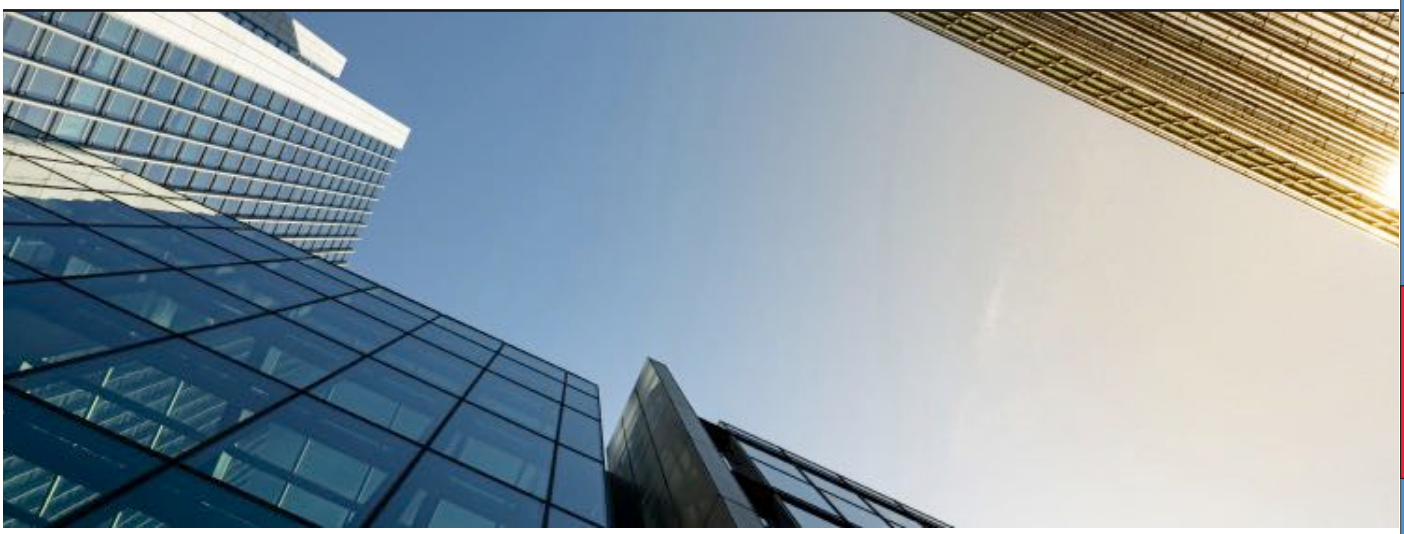
The Airport Room continues to develop and now has representatives from airports in Asia, China, the GCC, Europe and the United States on its Steering Committee.

Some of the key objectives for the Room include;

- Creating a workplan to deliver for managing airport specific assets
- Usage of rules for IFC models at Airports
- Linked data / ontology regarding library exchange specifications.
- Development GIS-IFC interoperability
- Missing IFC entities
- Identification of the functional requirements of a Digital Twin
- Enabling economies of scale with the supply chain and maintenance suppliers
- Completing the existing standards with airport-specific objects, data and processes
- Integration of these standards to align the building, infrastructure and airport processes
- Enabled asset management decisions based on cost, risk and performance derived from openBIM for the entire lifecycle of airport facilities
- Innovative solution decisions designed to reduce disruption at airports
- Collaboration with the other buildingSMART Rooms

"The mission of the Airport Room is to develop and deploy open digital standards for the airport environment"

Building Room



Core Mission

The core mission of the Building Room is to create open digital standards and solutions by enabling intelligent data that either contributes to the planning, design and construction of buildings, or the ongoing operations and maintenance. This will enable process and data integration for buildings for the entire lifecycle. The Building Room is led by a steering committee comprised of representatives from international members and local buildingSMART chapters that are focused on a variety of projects.

"Some are close to conclusion such as the Precast Concrete, Energy transfer and Quantity Take off standards"

Great progress has continued to be made throughout 2019 into 2020 with many projects being developed.

Some of the key objectives of the Building Room are:

- Open standard data exchange for building whole life management
- Asset management exchange of information
- Enduring archives of asset information
- Digital project management

There is a range of initiatives in the Building Room portfolio. Some are close to conclusion such as the Precast Concrete, Energy transfer and Quantity Take off standards. Others are on the verge of launching into development – for example Fire Safety strategies and IFC rebar as an exchange of data between software applications related to reinforcing steel. And still others are at the exploratory stage with some parties that have expressed an interest. These include timber structures, hospitals and healthcare, food services handover from construction to operation (COBie) and structural engineering.

Construction Room

Core Mission:

The mission of the Construction Room is to advance site productivity, lower construction costs, and improve construction safety through the use of openBIM and the application of open data standards. The room aims to boost the use of digital tools and standards to improve overall performance and aims to change the entire construction industry for the better.

The Construction Room will begin to develop solutions and standards through many use cases and best practices around the world.

Some of the key objectives of the Construction Room are:

- Advance the digitalization of construction
- Develop site environment best practices based on openBIM
- Integration of design, cost and schedule
- Capturing of use cases to make 4D 5D more commonly used
- Provide openBIM education to the construction industry
- Logistics, material management and bar coding / RFID integration
- Incorporate forward-looking Information and Communication technologies into the development of open construction solutions and standards

With a strong focus on new technologies, the Construction Room continues to focus efforts on new and emerging trends that will enhance on-site performance. Proposed initiatives include Construction Information Management, Integrated BIM Project Management, 4D/5D modeling, BIM and the Internet of Things (IoT) and Robotics. Further proposals being developed also include big data analytics, AI, and construction planning automation. The Construction Room also focuses on data exchange with other industries with API technology as well as applying codes and standards across the supply chain.

"The Construction Room continues to focus efforts on new and emerging trends"

Infrastructure Room

Core Mission

The Infrastructure Room aims to combine, enhance and develop open standards for intelligent data, which enable process and data integration for infrastructure projects and assets. The Infrastructure Room leads buildingSMART's efforts in several areas, including roads, bridges, tunnels, ports and waterways and alignment work.

Some of the key objectives of the Infrastructure Room are:

- Enable data exchange based on open standards for the planning, realization and maintenance of infrastructure works and ultimately all aspects of the built environment
- Improve the exchange of information and open data access between asset management databases
- Promote enduring archives of asset information based on open standards
- Enable lifecycle information management for infrastructure based on open standards
- Enable the merging of project related information e.g. requirements and risks, with asset information

Notable highlights include increased cross-collaboration with other Rooms, key developments of projects such as IFC Road, IFC for Ports & Waterways, IFC Tunnel and the Common Schema project. A Technical Report called; Analysis of IFC, CityGML and LandInfra was created under the leadership of the Integrated Digital Built Environment (IDBE), a collaboration with the Open Geospatial Consortium (OGC) to increase the interoperability between data for both the geospatial and built environment domains. Key milestones of the Infrastructure Room include:

- **IFC Road** – led by Dr Hyounseok Moon, Karin Anderson and Juha Hyvärinen has now been completed. The IFC Road project has delivered Candidate Standard as well as other supporting reports. (May 2020).
- **InfraRoom Roadmap** was published in 2019 and a progress report was given at the International Standards Summit in Beijing along with a comprehensive list future projects that either support the extensions to bSI products, support open Infrastructure, or involve interaction/communication with industry stakeholders, other standards bodies/technical developments and bSI in general. The next step is to identify those projects that specifically respond to industry needs and for each: prepare a business plan, a summary of the proposed activity, the need for it, the benefits, an early scope and an idea of resource requirements.
- **IFC Bridge** – led by Christophe Castaing and André Borrmann. The IFC Bridge launched the Final Draft of the Schema Extension in March 2019.
- I**FC Ports and Waterways** – led by Professor Haijiang Li and Alex Bradley. 2019/20 has been a key development stage, delivering the IFC4.3 extension in collaboration with other Infra projects. The team is currently working on property sets, modelling guidelines and prototype implementations including successful tests in Autodesk Revit and use cases in capacity analysis & berthing analysis. Completion is expected in July 2020.
- **IFC Tunnel** – Led by Michel Rives and André Borrmann, the IFC Tunnel project, launched June 2019 with 20+ industry experts, has defined its scope, developed 30 use cases and run 2 expert panels (100+ attendance) and now aims at finalizing the expression of its IFC requirements by the end of June 2020, opening up for Phase-2 expected to start as of September.
- **IFC Infrastructure Extension** – led by Jim Plume (Common Schema project) work was completed through a collaboration between the InfraRoom and Railway Room to deliver a unified candidate standard for a fully-harmonized IFC infrastructure extension covering road, rail, bridge, ports and waterways as well as concepts that are common across those domains.

Product Room

Core Mission

The Product Room's core mission is to manage the development and provision of processes, templates, tools and functionality to enable the robust and efficient use of product data. This includes relevant third-party standards, classification systems and other forms of structured content for openBIM.

A refreshed steering committee has been elected and they are developing strategies that will bridge the information divide between those operating in the supply chain, where there are no international open standards, and the design-build domains who are using IFC based standards.

Some of the key objectives of the Product Room are:

- Develop the tools and templates that support the buildingSMART Data Dictionary
- Enable the efficient use of product data in projects and subsequent asset management including advances in Digital Supply Chains
- Support the other Rooms to define the product data requirements needed as outcomes of their standards
- Develop and execute projects for product support to advance the development of openBIM
- Facilitate the translation and localization of IFC

An Activity proposal to develop Content and quality management procedures for libraries is in preparation and a Product data templates project is currently at the Working Draft Standard phase.

The Room is also liaising with the consortium working group for advancing the supply chain needs in a proposal to connect bSI and GS1 standards which will ultimately develop new standards for product manufacturers.

"A refreshed steering committee has been elected"

Railway Room

Core Mission

The core mission of the Railway Room is to accelerate and exploit new digital opportunities for railway systems and create a comprehensive and applicable digital representation of the entire railway ecosystem that will support all phases of the lifecycle. This provides the basis of interoperable support systems, reduced complexity, secure and safe solutions and reduced costs for all stakeholders.

The Railway Room steering committee is led by representatives from ÖBB-Infrastruktur, SBB, Trafikverket, CRBIM, MINnD, SNCF, FTIA, and RFI and oversees the largest international project at bSI, called the IFC Rail Project. This project is developing with a conceptual model showcased in early 2019 and completion of the standard was presented as a candidate standard during the buildingSMART Standardisation Summit October 2019 in Beijing.

Some of the key objectives of the Railway Room are:

- Develop interoperable support systems
- Reduce the complexity of the rail ecosystem
- Assure secure and safe solutions
- Reduce project cost and delay for all partners
- Work with buildingSMART, rail owners and operators, and other stakeholders to:
    * Extend the IFC Infrastructure Schema for the rail domain, construction and maintenance
    * Contribute to IFC Common Schema development
    * Build on international consensus
    * Take into account iterative works with complementary data and IFC deployments
    * Support early deployment and testing by making the deliverables publicly available and open

With the main IFC Rail Project being the focal point of this room, specific activities of the room are divided into several initiatives supported by a Project Management Office and a Technical Services team. The groups are developing requirements, use cases, Information Delivery Manuals (IDM), UML models, and process maps in order to progress IFC Rail. These initiatives include Track Domain, Energy Domain, Signaling Domain, Telecommunication Domain, and Technical Services. The Common Schema project is improving collaboration with the Infrastructure which crosses infrastructure domains such as rail, road, bridge and others. There is also development of an IFC Rail Tutorial to provide a self-contained comprehensive tutorial for education and communication with the rail industry.

The outlook for 2020 is to approve the candidate standard together with different SW-vendors to reach the final standard status on the way to ISO standardisation and to enhance the candidate standard with further use-cases to complete the spectrum of the whole life cycle of rail infrastructure.

- **IFC Rail** phase one was led by a professional project management office under the leadership of Winfried Stix, Suo Ning, Chi Zhang and Christian Erismann and achieved **Candidate Standard**.

"In early 2019 and completion of the standard was presented as a candidate standard during the buildingSMART Standardisation Summit October 2019 in Beijing"

Regulatory Room

Core Mission

The core mission of the Regulatory Room is to help both facility owners and regulatory authorities benefit from the use of openBIM to meet expectations. The vision is an automated regulatory process, achieved by supporting gradual change in workflow from manual to fully automated, whilst safeguarding the legal perspective. The Regulatory Room continues to improve in the development of procedures through rigorous guidelines and to support activities across the community. The Regulatory Roadmap has developed with short, medium and long-term goals, based on its published charter and roadmap.

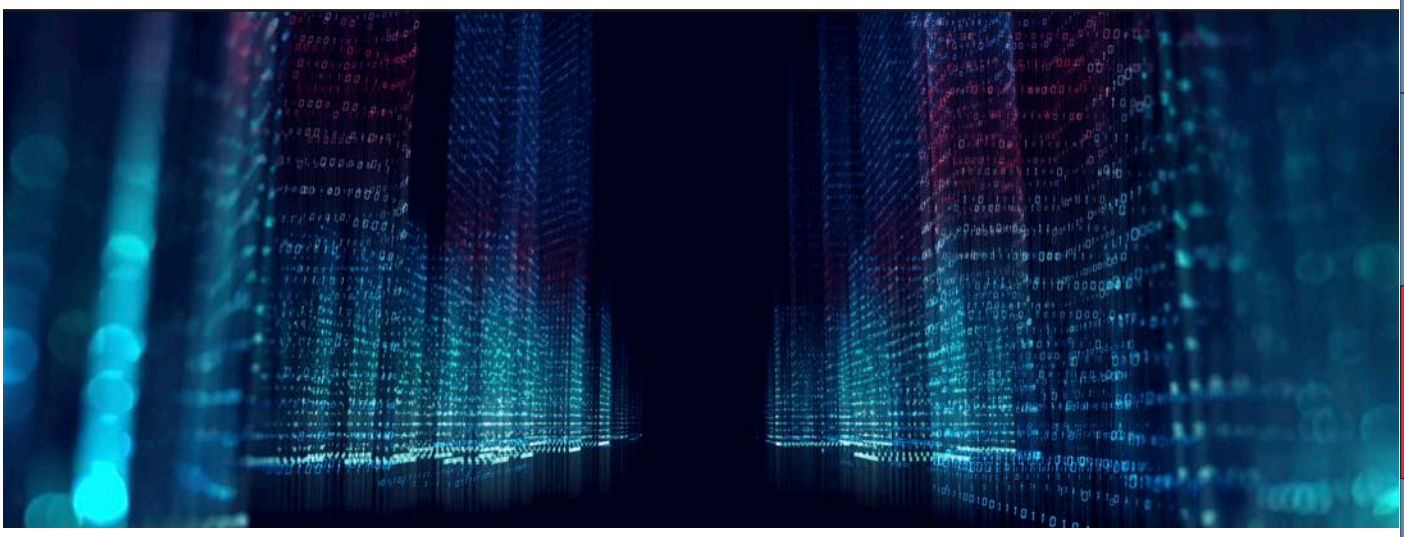
Some of the key objectives of the Regulatory Room are:

- Standardize processes, workflows and procedures for applicants and regulators based on openBIM and support them with tools, guidelines and manuals
- Support interoperability between Regulatory, Requirements and Recommendatory (RRR) content
- Provide an open discussion forum for each government's building regulators, researchers, and implementers to promote openBIM based processes and collaborative issues
- Be an arena for government regulatory bodies to share information, inspire and implement automated code checking using openBIM standards including ISO 16739 in real life situations
- Lead and manage projects and initiatives to facilitate and influence adoption by stakeholders.

The room has produced several bSI Technical reports that are now in the final editing and approval stage prior to publication. These are;

- e-Submission: Common guidelines to introduce BIM to the building approval process
- Application forms: common information requirements for automated compliance checking
- Automated regulatory checking, which is an initiative to continue development of the business case and enhancement of current technologies to develop a model checker that performs rule-based code compliance checks within the BIM model
- The Room is also trialing the bSI Use Case Management Tool for standardized use cases for BIM in Regulatory processes and preparing to undertake a survey of Regulatory bodies.

Technical Room



Core Mission

Some of the key objectives of the Technical Room are:

- Pursue innovative programs to align with the fast-moving digitization of the industry
- Ensure buildingSMART benefits from that latest technical research and advances from university or industry and develops an active technical community
- Proactively support interfaces with other standards and working platforms such as geospatial and web standards.
- Develop workflow enabling toolkits

In 2019 the technical room has streamlined and accelerated the processes for activity and project proposals coming from the community. Consequently, there are a number of new technical initiatives in development.

- Work is being done to develop a new **Javascript Object Notation (JSON)** version of the IFCs, including explorations in using new web-based data protocols to support online and web database applications.
- An enhanced approach to formalizing the BCF workflows.
- **IDM Toolkit** – This project proposes a user-focused framework for 1) creating a simple application for industry professionals to define their BIM processes based on the IDM methodology; 2) supporting the exchange of IDM's (idmXML and the IDM server); and 3) supporting the use of computer-readable IDM's for project execution planning and delivery; including the specification of exchange requirements (ERs).
- **openCDE APIs** – This proposal addresses opportunities to improve interoperability within the AEC software ecosystem by connecting data silos, transcending the gaps between tools built by different software vendors. The approach chosen by the proposed project is to develop interoperable, domain-specific APIs. These domain-specific APIs share a common "Foundation API" standardizing authentication and identity.
- **Improving predictability of BCF workflows**. The BIM Collaboration Format has an XML representation and an API accessibility option. Both provide enormous benefits to the built asses industry. With the rapid growth of BCF implementations, the predictability of BCF workflows needs to be improved.

The Technical Room also coordinate the publication of the technical report "Built environment data standards and their integration: an analysis of IFC, CityGML and LandInfra".

Other projects, like the development of a binary format of IFC (HDF5), and the development of machine-readable Information Delivery Specifications (Exchange Information Requirements) are in the pipeline to be developed in the Technical Room in 2020.

Compliance

Professional Certification

The Professional Certification program has developed significantly since its public launch in 2018. Under the guidance of the program steering committee, this significant initiative has matured and expanded both its outreach and content. Now being adopted by seventeen Chapters, the program supports professionals across the industry in understanding and applying openBIM solutions.

The program went through a significant rebranding at the end of 2019 and has delivered some major milestones. The two levels of the program are now referred to as “Foundation” and “Practitioner”. The Foundation level has been operating since 2018 with the launch of the Basic module in Germany and has now been translated into 5 languages. The Foundation level will be expanded with a further seven specialist curricula, to build on the Basic curricula (Owner, Contractor, Designer, Manufacturer, COBie, Facility Management and Energy Performance). The first of these will be launched in 2020. (More information at https://education.buildingsmart.org/)

The Practitioner level is now in development. In a predevelopment phase, an initial offering, the COBie Certified Professional™, was developed under the leadership of Dr. Bill East and a team of leading international COBie specialists. This pilot program has already certified the first batch of professionals and has been overwhelmed with registrations of interest from around the world. (More information at https://cobie.buildingsmart.org/).

We are tremendously grateful for the outstanding contributions from the international steering committee, the Chapter program committees, as well as the international advisory panel members and expert contributors from around the world.

High level numbers:

- **2** Program levels
- **17** Chapters now engaged
- **58** registered Training providers
- **2800+** qualified individuals

“Sustainable digital transformation relies on more than great technical innovation. It requires a cultural change, whereby individuals understand and apply appropriate technologies and methods for digital ways of working. The buildingSMART Professional Certification program is oriented towards this goal; supporting a cultural shift for sustained digital transformation”

Mark Baldwin, Leader of the Professional Certification Program.

Compliance

Software Certification

Software certification services continues to be led and supported by the Institute of Applied Building Informatics (IABI), AEC3 and Apstex. The focus during 2019 was consulting vendors to switch to IFC4-Software Certification.

Demand for certifications of the established IFC 2x3 exchanges continued to be healthy with 7 new software exchanges being certified during the year. This is a good indicator of the continuing and growing use of IFC based exchanges in project work.

Numbers for IFC2x3 Software Certifications:

- Total 2x3 certified applications: **67**
- Total export Architectural: **11**
- Total export Structural: **8**
- Total export MEP: **7**
- Total export: **26**
- Total import: **41**

In 2019, there were a total of three applications certified for IFC4 export:

- Vectorworks, Architectural Exchange
- Tekla Structures, Structural Exchange
- Archicad, Architectural Exchange

In 2019, five new applications registered for IFC4 certifications, of which four have progressed to a sufficient pace.

More software vendors are expected to follow shortly.

The learning from the 2018 and 2019 experience for the Reference View has meant that the specification and methodology for the planned Design Transfer View needs further review and greater upfront specificity from users as to their requirements.

"Certification enables clients to specify the delivery of services and data without worrying about format, compatibility, or versioning of platforms"

User Program

As described in 2018 the vision for the buildingSMART user program remains the comprehensive enablement of openBIM based solutions for front line users. Chapters play a major role in the fulfilment of this program both collecting local user requirements and deploying openBIM solutions.

The growth of the Chapter Network is important in extending the breadth of user engagement. Chapter Network development is discussed in section 21 and a sample of some activities of our Chapters is summarised in the timeline below.

Similarly, the development of the Professional Certification scheme and its roll out through the Chapter Network is focussed on enabling upskilling of users and encouraging a common international framework to support the use of openBIM solutions.

Chapters are encouraged to form local 'mirror' working groups locally to align with the international Rooms. There are formal entry points through the buildingSMART Process which facilitate the elevation of requirements and solution proposals from Chapters to Room Steering Committees. These needs are usually developed based on specific use cases. buildingSMART is working with the Swiss Chapter to develop a Use Case Management tool to assist and improve this process and, likewise, the dissemination of solutions.

Support services are discussed elsewhere and are designed to assist users in the practical application of solutions in real-life. buildingSMART is seeking to expand these services and enable open source tool communities to deliver against specific demand and requirements.

Communications are being improved with digital platforms such as webinars enabling users to consume new methods of learning materials through new forms.

One of the fastest growing areas is the bSI Awards program which was once again very successful in 2018. A total of 84 projects were submitted, 56 meeting next stage criteria and 40 being considered by the independent jury. In total, there were four category winners and 6 special distinction recipients. For a more detailed review of the awards program, see section 20.

Chapter 2019 Activity Summary

Awards Program

2019 saw a record year for award submissions with a total of 109 spanning 5 different categories. There were 27 different countries represented for the initial round of submissions. There were also over 50 use cases cited in the project submission material. The 67 jury members reduced the number of submissions and then selected finalists per category. Each finalist was then required to present online to a smaller, randomly selected jury panel who would then decide on the winners based on the presentation.

The awards ceremony took place at the International Standards Summit in Beijing. Each project delivered an infographic and promotional video of their project as part of the new and refreshed program for 2019. With a comprehensive jury adjudicating on the submissions, buildingSMART was pleased to award the following projects with prestigious awards:

Category Award Winners

Winner for Design:
Winner: DBM Vircon
Project Name: "Queen's Wharf Brisbane"

Winner for Construction:
Winner: ICOS Group, BYLOR Group, EDVANCE Group
Project Name: "Hinkley Point C EPR"

Winner for Operations and Maintenance:
Winner: Copenhagen Airport
Project Name: "Automatet Qualitycontrol"

Winner for Professional Research:
Winner: ACCA Software
Project Name: "Structural E-Permit"

Winner for Student Research:
Winner: The Technical University of Munich
Project Name: "Multi-LOD Requirements Manager"

Special Distinction Winners

Winner for Special Distinction for Infrastructure:
China Railway Design Corporation

Winner for Special Distinction for Building:
MT Højgaard and The Technical University of Denmark

Winners for a Special Distinction for Project Delivery:
China Communications Construction Company

Winner for a Special Distinction for Innovation:
National University of Singapore

Winner for an Honourable Mention:
Daniel Rossiter

Technical Services

Technical Services Group

In 2019 the technical resources have been restructured. The Software Certification, buildingSMART Data Dictionary, Model Support Group, Implementer Support group and the tooling for deployment and quality assurance are placed under the responsibility of the Technical Services Steering group. The Technical Director is appointed as the chair of the Technical Services group. This new structure places the services and resources under the oversight of the buildingSMART Management Office. In 2019 the board and SAC asked the buildingSMART Management Office to produce an integral Technical Roadmap for the Standards and Solutions Program. The final Technical Roadmap is finalized in Q1 of 2020.

buildingSMART Data Dictionary (bSDD)

The development and communication of the need and purpose of the buildingSMART Data Dictionary faced challenges as a result of a shortage of resources and investment. End-users have found adoption difficult as a result.

Looking ahead the bSDD needs a technical upgrade to support upcoming new standards like Product Data Templates, Linked Data and Information Delivery Specifications. In 2019 a transition period started to migrate the current bSDD towards a ‘next generation’ bSDD. buildingSMART is positioning the bSDD as a service to many stakeholders. The development of standards continues in the rooms (and outside buildingSMART). Publication of different standards and specifications in the bSDD makes them accessible in a standardized interface and workflow, lowering the threshold for adoption by end-users. Hosting such a service provides transparency and broader accessibility of open standards to the industry.

The bSDD will unlock value for many stakeholders by integrating local and application specific solutions. Although the final business model of the bSDD needs to be developed in 2020 and onward, it is clear that the bSDD service must include an ambition to become self-sustainable.

Deployment Tools

The IFC Extension projects have been working with new maintenance and deployment methodologies to develop IFCs. The use of the Unified Modelling Language UML opened the possibility for a broad range of data modelers and domain experts to engage in the development of new IFCs. This approach has inspired a path to work with industry standard technologies to broaden the engagement of different stakeholders in the evolution of IFC. The use of the GitHub platform continues to improve the way the community works and helps better integration and deployment tools to be predictable and synchronized.

Technical Services

IFC Development Group

Originally the development of IFCs was done by a combination of independent data modelers, academia, and software developers. Gradually the data modelers came together in the Model Support Group, developing new versions of IFC, and the Software developers in the Implementers Support Group, developing Implementer agreements. A separate 'Linked Data working group' has been working on a Web Ontology Language representation of IFC. Going forward, a predictable and stable implementation of IFC requires the software vendors to be able to provide input and be involved in decisions about new versions of IFC.

In 2019 the Technical Services Group has started to integrate the MSG, the ISG and the Linked Data working group to an integral 'IFC Development group'. A guideline stating 'the 10 principles of IFC' has been developed and a decision workflow to decide on new feature requests have been created. It is the intention to get more transparent development and public consultation in the development of future IFCs. The GitHub platform helps make this transparent and traceable.

SCTE

The Standards Committee Technical Executive has been strengthened in 2019 and is now almost at full capacity. The working methodology and procedures for SCTE members to review technical deliverables from Rooms has been set up. The SCTE has a monthly online meeting to discuss several strategic technical topics. In 2020 the SCTE will have a first face-to-face meeting to work on the Technical Roadmap.

"The Standards Committee Technical Executive has been strengthened in 2019 and is now almost at full capacity. "

Marketing and Communications

Following on from a strong year in 2018, 2019 was a year of real acceleration for marketing and communications. A series of investments were made to support the function. In particular, bSI made some significant endeavours to deliver the work we do in multiple formats, including more online options for the community. The marketing function also focused on helping improve communication workflows for the solutions and standards program. There was also significant work done on moving the document management system from ShareFile to Box as well as improving automation of tasks for the management office.

Further to this, the awards program continued to be a growing success and the two summits held in 2019 were record-breaking. Both these resulted in huge amounts of content and each finalist delivered materials as part of the program which have been widely used.

Websites

Further work has taken place on the various websites under the leadership of bSI. Below is an image of the different marketing domains available with information about what their role and function is and how you can access them.

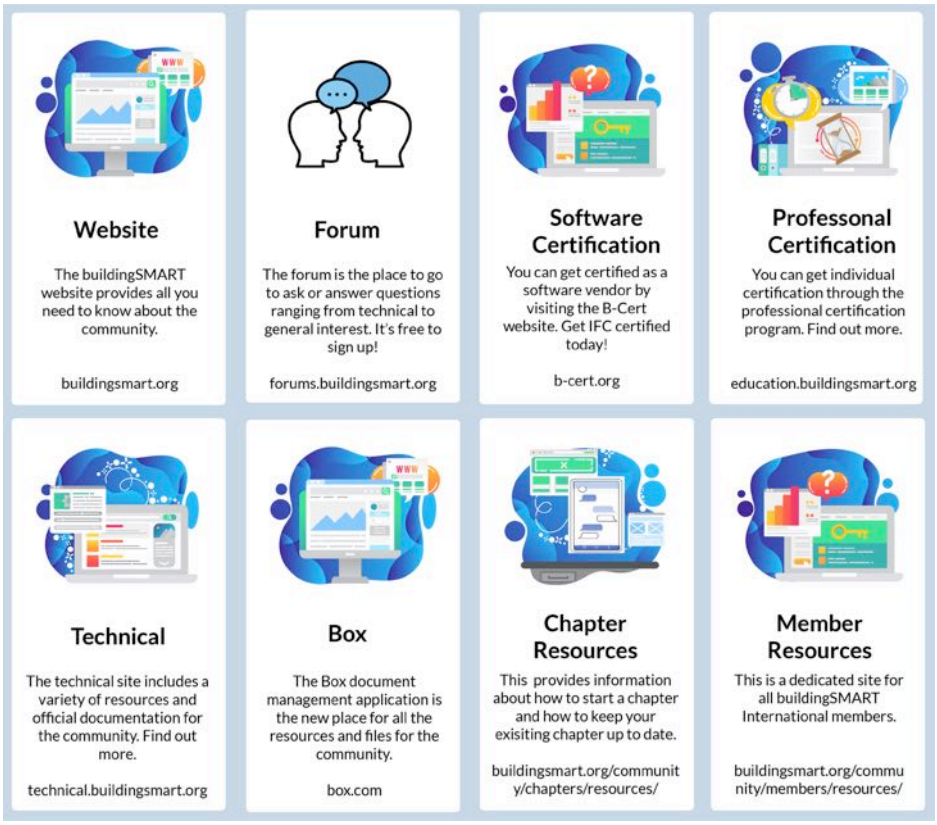
Platforms

bSI continues to rely heavily on the CRM platform of **HubSpot**. This is the fulcrum of communications to the community. HubSpot has a variety of integrations and these have been extensively used to help deliver efficiency improvements.

GoToWebinar has been used heavily in 2019 as a marketing tool. This has been delivering member webinars as part of their benefits as well as supporting the Solutions and Standards Program. **GoToMeeting** is used to convene meetings as is Microsoft Teams.

Videos are managed on the **Vimeo** account, delivering options for on-demand content to be placed and then embedded in various websites as a result. This allows the streaming to come from a server and lightens the website load.

The team is now enabled with **Camtasia** accounts and a lot of video production is now being done to support the ongoing activities. This includes on-demand content for resources pages such as the chapter and member websites.



"bSI made some significant endeavours to deliver the work we do in multiple formats

HubSpot has a variety of integrations and these have been extensively used to help deliver efficiency improvements."

Marketing and Communications

Monday.com is the tool for project managing the rooms and the output. This includes working documents, tasks and deliverables and roles and responsibilities. This is an integral part of the Solutions and Standards Program and provides excellent program management capabilities.

The buildingSMART Forum continues to provide users a variety of ways of getting involved and engaging with the community. Via managed moderators and subject-related posts, users can submit questions, provide feedback and interact with experts.

Social Media

Social media platforms are fast becoming a critical function for buildingSMART's outbound communications. Growth in LinkedIn for example has been high. A break-down of the channels and the growth can be seen below:

- LinkedIn has grown from 8,401 in 2018 to **18,402** in 2019. This channel sees the highest amount of engagement.
- Twitter grew from 5,746 followers to **6,499**.
- Facebook grew from 1,072 to **1,527**.
- YouTube has grown from 744 followers to **1,070**.
- Vimeo now has **101** followers.

News

The Digital Newsletter continues to be a widely read material for the community. This has a large subscriber base. In 2019, bSI published a variety of important news stories for the community. Full stories can be found on the website. Here is a list of some important highlights:

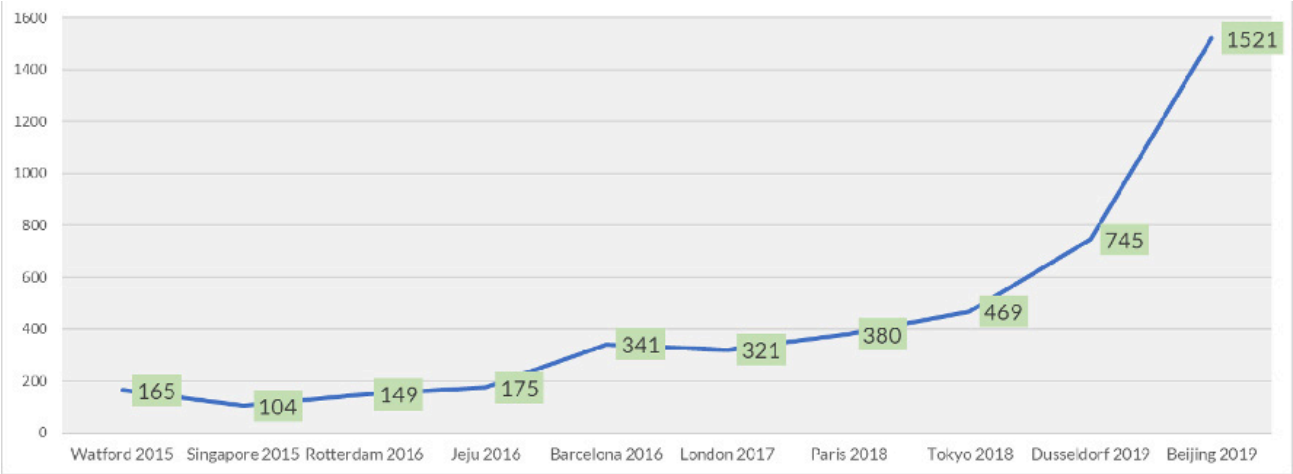
- IFC Rail reaches Candidate Standard
- Oracle joined as a SAC member
- IFC Bridge reaches Candidate Standard
- bSI and ODA sign letter of cooperation
- bSI appoints Technical Director, Léon van Berlo
- Poland becomes a new Chapter

The International Standards Summits in 2019

Düsseldorf, Germany - 25-29 March 2019
Attendance: 745
Fellowships awards: 9
Roundtables: 3
Hosted by: bS Germany

Beijing, China - 28-31 October 2019
Attendance: 1512
bS Awards: 11
Roundtables: 1
Hosted by: bS China

bSI Summit Attendance Growth



Chapter Network

2019 was a great year for the Chapter network. Poland, Hong Kong and Turkey became developing chapters and Italy was re-established. The Nordic Hub signalled its intention to split into single chapters under Sweden, Denmark and Finland.

Germany and China delivered exceptional International Standard Summits and the Nordic Hub hosted the International Council and Chapter Conference in Helsinki, Finland.

A new formal structure was introduced to encourage cooperation and coordination between Chapters. This is the Chapter Hub concept. We are pleased to announce that France and Canada have led the formation of a Francophone (French Speaking) Hub and that the Nordic region Chapters are committed to continuing the regional cooperation and engagement with the Baltic States through a new Nordic Chapter Hub.

Expressions of interest have been received from bodies in numerous territories around the world and interest in our network is high and continues to grow. Exiting chapters and Chapter Hubs are asked to assist in supporting and vetting parties interested in forming new chapters.

In the USA and UAE bSI is proactively engaged in initiatives to form new chapters."

Full Chapters:

- Benelux
- Canada
- China
- Denmark
- Finland
- France
- Germany
- Japan
- Norway
- Russia
- South Korea
- Switzerland
- Sweden
- UK and Ireland

Developing Chapters

- Austria
- Australasia
- Hong Kong
- Italy
- Poland
- Spain
- Turkey
- Singapore

2019 Chapter Timeline

JANUARY
The Italian Chapter outlined the need arising from EU funded work. Energy Performance Training Certification suggested inclusion in Professional Certification program.

FEBRUARY
China Chapter sign up to the Professional Certification program. Italian Chapter officially reformed.

MARCH
buildingSMART Germany Host International Standards Summit in Dusseldorf. 745 attendees for the working week and 1,356 for the full summit.

APRIL
buildingSMART France and buildingSMART Switzerland announce Francophone initiative.

MAY
bS Italy announced as hosts for the International Council and Chapter Conference in 2020. bS Switzerland announce intention to host Spring Summit 2021.

JUNE
buildingSMART Nordic Chapter host International Council and Chapter Conference in Helsinki. buildingSMART Poland Chapter Application approved.

JULY
Minor changes to articles.

AUGUST
bSI announce updated brand policy for Chapters.

SEPTEMBER
Nordic Chapter Reorganization plan. Finland, Sweden and Denmark to be chapters in 2020. Formal Chapter requests received from Hong Kong Alliance to form a chapter.

OCTOBER
buildingSMART China host International Standards Summit in Beijing. 1400+ attendees on the first day of the Summit.

NOVEMBER
Hong Kong Alliance (HKABAEIMA) gets board approval to be a developing chapter.

DECEMBER
bS Turkey becomes developing chapter. Denmark application approved. Parties in the UAE received bSI endorsement to pursue next steps in application to form a Chapter

Membership

Membership continues to grow steadily and 2019 was another positive step in the right direction. There are now four membership categories: Strategic, Principal, Multinational, and Standard. Strategic membership is the most influential to the bSI management office. Members can directly contribute to the strategic direction of buildingSMART. Benefits include the Strategic Advisory Council meetings, hosted twice yearly. Principal membership gives members a direct stake in the Technology Roadmap. Multinational members are entitled to be members of up to five local Chapters. Standard members are entitled to be a member of a local Chapter of choice.

As of early 2019, there are six strategic members: Arup, China Communications Construction Company (CCCC), China Railway BIM Alliance (CRBIM), Nemetschek Group, Oracle, and Siemens. There are seventeen multinational members and twenty-seven standard members. Members sit on the Standards Committee, which endorses the creation of standards, and can work in Room Committees and on projects. Members benefit from the collective local and international activities of other members. They play an active role, not only in identifying issues, but also in developing solutions.

New members during 2019 and list of joiners up to time of publication Oracle, (strategic); Catenda, Esri, Data Design System, Shimizu, Vectorworks (multinational), Basler & Hofmann, Cemex, China Design Digital Technology, Geodata, Graebert, Ferrovial, HDR, ILF, Network Rail, OYO Corporation, Politecnico Milano, Stora Enso, Takenaka, Tongji and TNO (standard members).

Strategic

ARUP

CCCC China Communications Construction Company

CRBIM 中国铁路BIM联盟

NEMETSCHEK GROUP

ORACLE

SIEMENS Ingenuity for life

Multinational

Bentley Advancing Infrastructure

BEXEL CONSULTING

BRICSCAD

Catenda

cobuilder

esri

DASSAULT SYSTEMES

DATA DESIGN SYSTEM A NEMETSCHEK COMPANY

GRAPHISOFT A NEMETSCHEK COMPANY

KAJIMA CORPORATION

Royal HaskoningDHV Enhancing Society Together

SHIMIZU CORPORATION SHIMZ

STRABAG

SBB CFF FFS

Trimble

VECTORWORKS

Standard

ACCA SOFTWARE

Basler & Hofmann

BIM INFRA.DK

CEMEX

crb

DBA GROUP

DB NETZE

ferrovial agroman

FM Global

GEODATA

Gräbert The Trinity of CAD Desktop - Mobile - Cloud

HOCHTIEF PPP SOLUTIONS

HOCHTIEF ViCon

ILF CONSULTING ENGINEERS

Leica Geosystems

metro

mensch maschine CAD as CAD can

NetworkRail

ÖBB INFRA

OYO oyo corporation

POLITECNICO MILANO 1863

ProMaterial The digital construction network

RFI RETE FERROVIARIA ITALIANA

Rijkswaterstaat Ministry of Infrastructure and the Environment

SAMOOC.M.

Schiphol Amsterdam Airport

SNCF RÉSEAU

stora enso

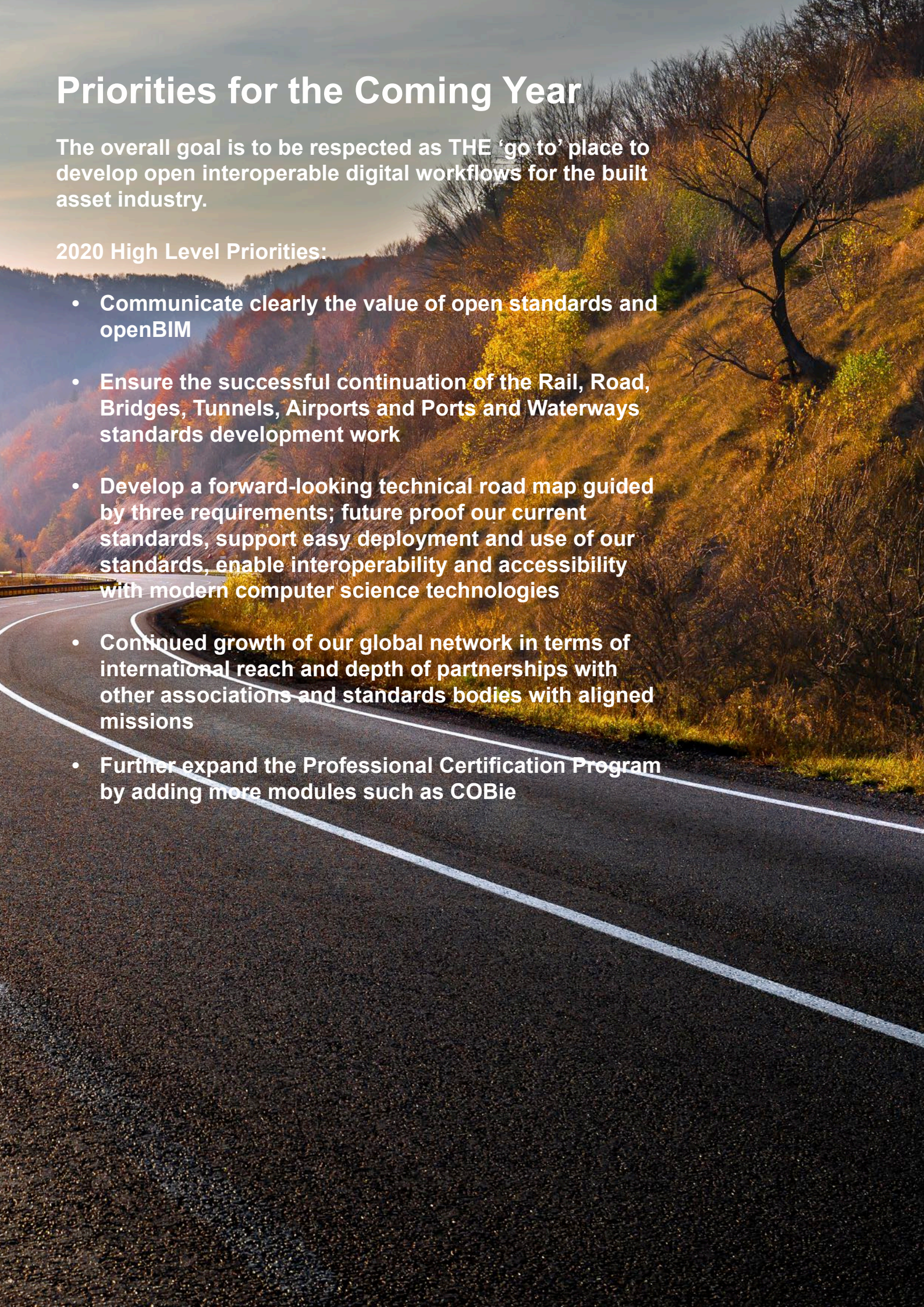
TAKENAKA

TNO innovation for life

TRAFIKVERKET SWEDISH TRANSPORT ADMINISTRATION

Sponsors

buildingSMART projects are carried out with the help of professional contributors from formal work-in-kind and funding from industry sponsors. Without this direct support, the projects would not be able to succeed.



Priorities for the Coming Year

The overall goal is to be respected as THE ‘go to’ place to develop open interoperable digital workflows for the built asset industry.

2020 High Level Priorities:

- **Communicate clearly the value of open standards and openBIM**
- **Ensure the successful continuation of the Rail, Road, Bridges, Tunnels, Airports and Ports and Waterways standards development work**
- **Develop a forward-looking technical road map guided by three requirements; future proof our current standards, support easy deployment and use of our standards, enable interoperability and accessibility with modern computer science technologies**
- **Continued growth of our global network in terms of international reach and depth of partnerships with other associations and standards bodies with aligned missions**
- **Further expand the Professional Certification Program by adding more modules such as COBie**

Governance and Finance

buildingSMART International is incorporated in the UK as a company limited by guarantee provided by its Chapters, which are self-governing and set up according to the legal framework in their home country. The International Council (IC) consists of representatives from the Chapters in their governance capacity and holds an annual general meeting. Each Chapter sends two representatives to the IC meetings. A Board is elected at the annual International Council meeting.

The Board met on six occasions during 2019. Its work includes setting key priorities, reviewing and sign off the accounts, receiving and deciding upon new Chapter applications, setting and updating Company Byelaws, oversight of key strategies such as the development of the technical road map and US and UAE country strategies. New Byelaws were approved by the Board on 5th September 2019.

The Strategic Advisory Council (SAC) also advises bSI, and during the year SAC members met with the Board on two occasions. Key topics in these discussions included: Engagement with China, delivering for major infrastructure stakeholders, technology strategy, Smart Grids, Cities and BIM-GIS.

The senior leadership team now comprises: Chief Executive, Operations Director, Marketing Director and Technical Director (joined late 2019). The Chief Executive is also the Company Secretary.

The principal source of income for bSI is membership dues which in 2019 contributed €1,298,000 (a 17% increase on 2018). Income from Chapter membership stood at €310,000. €169,000 was returned to the Chapters under the membership rebate scheme. Income from services was €225,000 which was largely due to software certification and the Professional Certification Program (c€100,000 each) and agent fees from bSDD licensing (€25,000). 2018 service income was from software certification only. A large proportion of the software certification and professional certification income, however, washes through with payments to the service provider and program costs respectively.

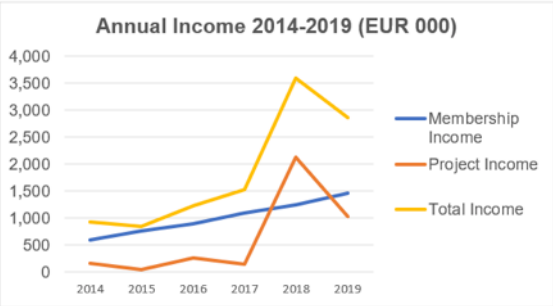
As the organisation achieves more engagement from the international community to work in the programs, core overheads also increase. The largest of the bSI Management Office outgoings are bSI Management costs (€906,000 in 2019). Management costs increased due to the retention of Technical Director services and the recruitment of an International Projects Co-ordinator. Other significant increases in management office costs in 2019 include office rent and travel. The €60,000 increase in program support costs in 2019 is due largely to the engagement of a bSDD product manager and additional marketing support, also in the US.

Projects are funded separately, with total funding and expenditure balancing out on project completion. Project funding in the 2019 accounts is around half that of 2018 which is predominantly due to timing of income recognition for the Rail project.

The fluctuation in currency exchange rate between the Euro and GBP during the year resulted in an exchange loss of €84,000 in 2019. Despite this, the year ended with only a negligible loss of €2,000. Total equity is €454,000. Increasing revenue, chiefly through membership, remains a priority.

The accounts are published at the end of this report.

Annual Income Since 2014



Operating Expenditure for 2019

Income	2018 Actual	2019 Actual
Chapters	283	310
Membership	1,112	1,298
Chapter Rebate	-162	-169
Services	62	225
Projects	2,119	1,024
Other Income	168	144
Exchange gain on income	7	19
Income Total	**3,589**	**2,851**

Expense	2018 Actual	2019 Actual
bSI Management Office	1,046	1,403
Program Support	160	220
Services	68	152
Projects	2,126	993
Currency exchange	-14	85
Expenses Total	**3,386**	**2,853**
Surplus / Deficit	**203**	**-2**

Financial Statement

Company Registration No. 05024694 (England and Wales)

BUILDINGSMART INTERNATIONAL LIMITED

UNAUDITED FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2019

PAGES FOR FILING WITH REGISTRAR

Financial Statement

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Statement of changes in equity	
Notes to the financial statements	3 - 8

Financial Statement

STATEMENT OF FINANCIAL POSITION

AS AT 31 DECEMBER 2019

	Notes	2019 £	2019 £	2018 £	2018 £
Non-current assets					
Intangible assets	3		154,954		172,171
Property, plant and equipment	4		4,234		3,605
			159,188		175,776
Current assets					
Inventories		2,930		10,999	
Trade and other receivables	5	224,560		1,173,868	
Cash and cash equivalents		1,445,830		1,099,546	
		1,673,320		2,284,413	
Current liabilities	6	(1,345,730)		(1,957,552)	
Net current assets			327,590		326,861
Total assets less current liabilities			486,778		502,637
Non-current liabilities	7		(102,218)		(116,739)
Net assets			384,560		385,898
Reserves					
Capital contribution reserve			52,431		52,431
Income and expenditure account			332,129		333,467
Members' funds			384,560		385,898

The directors of the company have elected not to include a copy of the income and expenditure account within the financial statements.

For the financial year ended 31 December 2019 the company was entitled to exemption from audit under section 477 of the Companies Act 2006 relating to small companies.

The directors acknowledge their responsibilities for complying with the requirements of the Companies Act 2006 with respect to accounting records and the preparation of financial statements.

The members have not required the company to obtain an audit of its financial statements for the year in question in accordance with section 476.

These financial statements have been prepared and delivered in accordance with the provisions applicable to companies subject to the small companies regime.

Financial Statement

STATEMENT OF FINANCIAL POSITION (CONTINUED)

AS AT 31 DECEMBER 2019

The financial statements were approved by the board of directors and authorised for issue on ..... and are signed on its behalf by:

.....
Mr W Moore
Director

Company Registration No. 05024694

Financial Statement

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2019

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1 Accounting policies

Company information

buildingSMART International Limited is a private company limited by guarantee incorporated in England and Wales. The registered office is 9 Quy Court, Colliers Lane, Stow-cum-Quy, Cambridge, CB25 9AU.

1. Accounting convention

These financial statements have been prepared in accordance with FRS 102 "The Financial Reporting Standard applicable in the UK and Republic of Ireland" ("FRS 102") and the requirements of the Companies Act 2006 as applicable to companies subject to the small companies regime. The disclosure requirements of section 1A of FRS 102 have been applied other than where additional disclosure is required to show a true and fair view.

The financial statements are prepared in sterling, which is the functional currency of the company. Monetary amounts in these financial statements are rounded to the nearest £.

The financial statements have been prepared under the historical cost convention. The principal accounting policies adopted are set out below.

2. Income and expenditure

Turnover comprises the fair value of the consideration received or receivable for the provision of services in the ordinary course of the company's activities and membership subscription income. Turnover is shown net of sales/value added tax, returns, rebates and discounts.

The company recognises revenue when:
The amount of revenue can be reliably measured;
it is probable that future economic benefits will flow to the entity;
and specific criteria have been met for each of the company's activities.

Income is recognised over the period to which it relates and any amounts received during the year that relate to future periods are carried forward at the balance sheet date as deferred income.

3. Intangible fixed assets other than goodwill

Intangible assets acquired separately from a business are recognised at cost and are subsequently measured at cost less accumulated amortisation and accumulated impairment losses.

Intangible assets acquired on business combinations are recognised separately from goodwill at the acquisition date where it is probable that the expected future economic benefits that are attributable to the asset will flow to the entity and the fair value of the asset can be measured reliably; the intangible asset arises from contractual or other legal rights; and the intangible asset is separable from the entity.

Amortisation is recognised so as to write off the cost or valuation of assets less their residual values over their useful lives on the following bases:

bSI DD	Straight line over 10 years

4. Property, plant and equipment

Property, plant and equipment are initially measured at cost and subsequently measured at cost or valuation, net of depreciation and any impairment losses.

Financial Statement

NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

FOR THE YEAR ENDED 31 DECEMBER 2019

---

1 Accounting policies **(Continued)**

Depreciation is recognised so as to write off the cost or valuation of assets less their residual values over their useful lives on the following bases:

Office equipment	25% straight line basis

The gain or loss arising on the disposal of an asset is determined as the difference between the sale proceeds and the carrying value of the asset, and is credited or charged to surplus or deficit.

5. Impairment of non-current assets

At each reporting period end date, the company reviews the carrying amounts of its tangible and intangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss (if any). Where it is not possible to estimate the recoverable amount of an individual asset, the company estimates the recoverable amount of the cash-generating unit to which the asset belongs.

Recoverable amount is the higher of fair value less costs to sell and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset for which the estimates of future cash flows have not been adjusted.

If the recoverable amount of an asset (or cash-generating unit) is estimated to be less than its carrying amount, the carrying amount of the asset (or cash-generating unit) is reduced to its recoverable amount. An impairment loss is recognised immediately in surplus or deficit, unless the relevant asset is carried at a revalued amount, in which case the impairment loss is treated as a revaluation decrease.

Recognised impairment losses are reversed if, and only if, the reasons for the impairment loss have ceased to apply. Where an impairment loss subsequently reverses, the carrying amount of the asset (or cash-generating unit) is increased to the revised estimate of its recoverable amount, but so that the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognised for the asset (or cash-generating unit) in prior years. A reversal of an impairment loss is recognised immediately in surplus or deficit, unless the relevant asset is carried at a revalued amount, in which case the reversal of the impairment loss is treated as a revaluation increase.

6. Inventories

Inventories are stated at the lower of cost and estimated selling price less costs to complete and sell. Cost comprises direct materials and, where applicable, direct labour costs and those overheads that have been incurred in bringing the inventories to their present location and condition.

Inventories held for distribution at no or nominal consideration are measured at the lower of replacement cost and cost, adjusted where applicable for any loss of service potential.

At each reporting date, an assessment is made for impairment. Any excess of the carrying amount of inventories over its estimated selling price less costs to complete and sell is recognised as an impairment loss in profit or loss. Reversals of impairment losses are also recognised in profit or loss.

7. Cash and cash equivalents

Cash and cash equivalents are basic financial assets and include cash in hand, deposits held at call with banks, other short-term liquid investments with original maturities of three months or less, and bank overdrafts. Bank overdrafts are shown within borrowings in current liabilities.

NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

FOR THE YEAR ENDED 31 DECEMBER 2019

1 Accounting policies **(Continued)**

8. Financial instruments

The company has elected to apply the provisions of Section 11 'Basic Financial Instruments' to all of its financial instruments.

Financial instruments are recognised in the company's statement of financial position when the company becomes party to the contractual provisions of the instrument.

Financial assets and liabilities are offset, with the net amounts presented in the financial statements, when there is a legally enforceable right to set off the recognised amounts and there is an intention to settle on a net basis or to realise the asset and settle the liability simultaneously.

Basic financial assets

Basic financial assets, which include trade and other receivables and cash and bank balances, are initially measured at transaction price including transaction costs and are subsequently carried at amortised cost using the effective interest method unless the arrangement constitutes a financing transaction, where the transaction is measured at the present value of the future receipts discounted at a market rate of interest. Financial assets classified as receivable within one year are not amortised.

Classification of financial liabilities

Financial liabilities and equity instruments are classified according to the substance of the contractual arrangements entered into. An equity instrument is any contract that evidences a residual interest in the assets of the company after deducting all of its liabilities.

Basic financial liabilities

Basic financial liabilities, including trade and other payables, bank loans, loans from fellow group companies and preference shares that are classified as debt, are initially recognised at transaction price unless the arrangement constitutes a financing transaction, where the debt instrument is measured at the present value of the future payments discounted at a market rate of interest. Financial liabilities classified as payable within one year are not amortised.

Debt instruments are subsequently carried at amortised cost, using the effective interest rate method.

Trade payables are obligations to pay for goods or services that have been acquired in the ordinary course of business from suppliers. Amounts payable are classified as current liabilities if payment is due within one year or less. If not, they are presented as non-current liabilities. Trade payables are recognised initially at transaction price and subsequently measured at amortised cost using the effective interest method.

9. Taxation

The company is primarily a mutual company and as such is exempt from corporation tax on surpluses generated from mutual activities.

10. Employee benefits

The costs of short-term employee benefits are recognised as a liability and an expense, unless those costs are required to be recognised as part of the cost of stock or non-current assets.

The cost of any unused holiday entitlement is recognised in the period in which the employee's services are received.

Termination benefits are recognised immediately as an expense when the company is demonstrably committed to terminate the employment of an employee or to provide termination benefits.

11. Leases

Financial Statement

NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

FOR THE YEAR ENDED 31 DECEMBER 2019

1 Accounting policies **(Continued)**

Rentals payable under operating leases, including any lease incentives received, are charged to profit or loss on a straight line basis over the term of the relevant lease except where another more systematic basis is more representative of the time pattern in which economic benefits from the leases asset are consumed.

1.12 Foreign exchange

Transactions in currencies other than pounds sterling are recorded at the rates of exchange prevailing at the dates of the transactions. At each reporting end date, monetary assets and liabilities that are denominated in foreign currencies are retranslated at the rates prevailing on the reporting end date. Gains and losses arising on translation are included in the income statement for the period.

2 Employees

The average monthly number of persons (including directors) employed by the company during the year was 4 (2018 - 3).

3 Intangible fixed assets

	bSIDD £
Cost	
At 1 January 2019 and 31 December 2019	172,171
Amortisation and impairment	
At 1 January 2019	-
Amortisation charged for the year	17,217
At 31 December 2019	17,217
Carrying amount	
At 31 December 2019	154,954
At 31 December 2018	172,171

Financial Statement

NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

FOR THE YEAR ENDED 31 DECEMBER 2019

4 Property, plant and equipment

	Plant and machinery etc £
Cost	
At 1 January 2019	8,552
Additions	3,333
At 31 December 2019	11,885
Depreciation and impairment	
At 1 January 2019	4,947
Depreciation charged in the year	2,704
At 31 December 2019	7,651
Carrying amount	
At 31 December 2019	4,234
At 31 December 2018	3,605

5 Trade and other receivables

	2019 £	2018 £
Amounts falling due within one year:		
Trade receivables	161,159	658,099
Other receivables	63,401	515,769
	224,560	1,173,868

6 Current liabilities

	2019 £	2018 £
Trade payables	52,776	64,596
Other payables	1,292,954	1,892,956
	1,345,730	1,957,552

7 Non-current liabilities

	2019 £	2018 £
Other payables	102,218	116,739

Financial Statement

NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

FOR THE YEAR ENDED 31 DECEMBER 2019

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8 Members' liability

The company is limited by guarantee, not having a share capital and consequently the liability of members is limited, subject to an undertaking by each member to contribute to the net assets or liabilities of the company on winding up such amounts as may be required not exceeding £500.

9 Operating lease commitments

Lessee

At the reporting end date the company had outstanding commitments for future minimum lease payments under non-cancellable operating leases, as follows:

	2019	2018
	£	£
	8,882	3,520

10 Related party transactions

P Macleamy
(director)
During the year, the director made donations via CAF America which are included as other operating income.

Other member organisations
The directors Professor P I Kim, W H Moore, Professor R T Steinmann, K V Anderson D Schaper and C Castaing are connected with member organisations, which each pay annual membership subscriptions to buildingSMART International Limited in the normal course of their business.

In the course of normal business, some member organisations also receive payments for services provided to the company. Such services are provided on an arms length basis.

Fellows

In 2017 buildingSMART established a Fellowship Scheme to honour longserving professional contributors who have been the organisation's lifeblood over many years. buildingSMART wishes to ensure this scheme rewards those who contribute exceptionally, and is recognised as a very high honour. It must also grow in stature over the long term, sustaining the vital concessionary professional contributions on which buildingSMART depends.

In 2019, buildingSMART recognized the latest fellows which can be found below. A full list can be found on the bSI website.

Christophe Castaing
France

Birgitta Foster
USA

Roger Grant
USA

Tomi Henttinen
Finland

Inhan Kim
South Korea

Susan Keenliside
Canada

Nick Nisbet
UK & Ireland

Øivind Rooth
Norway

Jøns Sjøgren
Norway

Officers, Board Members and Leaders

buildingSMART International Management Office
Richard Petrie - Chief Executive
Richard Kelly - Operations Director
Léon van Berlo - Technical Director
Aidan Mercer - Marketing Director

Board Members
Patrick MacLeamy - Chairman
Rasso Steinmann - Deputy Chair
Bill Moore - Treasurer
Karin Anderson
Inhan Kim
Christophe Castaing (appointed June 2019)
Dirk Schaper
Kjetil Tonning
Christophe Moreau (retired December 2019)

Company Secretary
Richard Petrie

Certification
Mark Baldwin
Rasso Steinmann

Standards Committee Executive (SCE)
Birgitta Foster, Kjell Ivar Bakkmoen, Leif Granholm, Rasso Steinmann, Richard Petrie, Richard Kelly

Standards Committee Technical Executive (SCTE)
Håvard Bell, Mirbek Bekboliev, André Borrmann, Christophe Castaing, John Dickinson, Benjamin Gonzalez, Leif Granholm, Jan Karlshøj, Haijiang Li, Thomas Liebich, Nick Nisbet, Greg Schleusner, Dennis Shelden, Souheil Soubra, Bjørn Stangeland, Rasso Steinmann, Maya Tryfona, Léon van Berlo, Sergey Vishnevetsky, Chi Zhang

Implementers Support Group
Jeffrey Ouellette

Model Support Group
Thomas Liebich, Jon Mirtschin, Thomas Krijnen, Nick Nisbet

Airport Room
Adam Rendek - Co-leader
Miika Kostamo - Co-leader
Maya Tryfona, Arisca Droog, Xuan Dai, Christophe Carl Eichler, Fumiaki Kishida, , Mohammad Salem, Mark Ricketson, Marc Goldman, Birgitta Schock, Alex Worp

Building Room
David Ivey - Co-leader
Rob Roef - Co-leader
Geraldine Rayner, John Mitchell, Benjamin Gonzales, Kjell Ivar Bakkmoen, Jan-Anders Jönsson, Inés Azpeitia, Francis Leung, Gianluca Genova, Mirbek Bekboliev

Construction Room
Kazumi Yajima, Ken Endo

Infrastructure Room
Tiina Perttula - Leader
Jim Plume, Nobuyoshi Yabuki, Tristan McDonnell, Christophe Castaing, Phil Jackson, Ronald Bergs, Benno Koehorst

Product Room
Michel Bohren - Leader
Espen Schulze, Robert Heinze, Lai Wei, Hans-Christoph Gruler, Hansueli Schmid, Radboud Bayen, Alesi Umberto, Frédéric Grand

Railway Room
Winfried Stix - Leader
Liming Sheng, Peter Axelsson, Adrian Wildenauer, Patrick Offroy, Pierre Etienne Gautier, Peer Franz Josef, Tarmo Savolainen, Xenia Fiorentini, Christophe Castaing

Regulatory Room
Nick Nisbet - Leader
Masaki Muto, Franco Coin, Tamer El-Diraby, Tomi Henttinen

Technical Room
Greg Schleusner - Co-leader
Dennis Shelden - Co-leader
Christophe Castaing, Angel Velez, Wolfgang Hass, Jakob Beetz, Thomas Liebich, Bjørn Stangeland, Robert Anderson

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