EFCA

FUTURE LEADER OF THE YEAR

2021

Personal details / Entry Form

Full name: Krzysztof Wojslaw

Nationality: Polish

Birthday: 02.05.1990

Age as of 31/03/2021: 30

Company: Sweco

Location: Oslo, Norway

Member Association: RIF member

Contact details

E-mail address: Krzysztof.wojslaw@sweco.no

Cell phone number +47 92800551

Instructions for completing this form

Note to candidates

Each section and sub-section may be expanded as required. The completed entry form should be no longer than **16 pages in total**. Section A is to be completed by your employer, and Section C by the client.

All entries should be submitted in English. Any annexes in other languages should be accompanied by an English translation or will not be taken into account.

The form should be returned to your national association. They will forward it to the EFCA Secretariat.

You will be informed of the results of the competition at end of April 2021.

Good luck!

For those participating in the FIDIC FL competition

The requirements stipulated in the respective EFCA and FIDIC FL competitions coincide largely for 75%. The following three FIDIC competition requirements are entirely covered in the EFCA application:

- Technical achievements (see Section B in this template) (50%) What is 30% for EFCA
- Leadership achievements (see Section C in this template) (15%) What is 40% for EFCA
- Social and community contributions (see Section B in this template) (10%) What is 30% for EFCA

However, EFCA FLs interested in submitting an application for the FIDIC FL competition should complement their EFCA application with the following two extra requirements.

Applicants should demonstrate:

- Contributions to consulting engineering industry (15%)
- Contribution to consulting engineering associations (10%)

Section A. EMPLOYER'S RECOMMENDATION

Krzysztof joined Sweco in 2016 after working as a Planning Manager at Spenncon AS. At Sweco he is a specialist in parametric design and VDC and works as part of our bridge team. Ever since he started at Sweco, Krzysztof has impressed with his dedication and interest in immersing himself in his field of expertise and, in recent years, he has established himself as Sweco's leading parametric design expert. He works hard and purposefully to improve our service and has an extremely business-oriented approach. This led to him taking the initiative to develop parametric design tools that significantly reduce the planning time required for advanced public transport structures. Krzysztof has stood out as a pioneer and leading light within parametric design for some time and this autumn we received yet more confirmation of this. In November, he was awarded the "Young Consultant of the Year" award by the Norwegian Association of Consulting Engineers. In October, the 'Randselva Bridge' project won the "Best BIM Project of the Year" award at the Tekla Global BIM Awards.

The Randselva Bridge is the largest model-based bridge ever to have been designed and built totally based on the model. To this project, Krzysztof contributed the development and implementation of new technologies, as well as being responsible for coordinating the international parametric design team. In the Randselva Bridge project, Krzysztof constantly impressed. An example of this is how he combined ICE meetings with a parametric design hackathon during the project planning phase. This working method made it possible to create hundreds of iterations of the model, allowing the project planning team to select the best solution. The client also participated in these meetings and benefited from having the opportunity to see both the changes and the consequences of the changes.

When Krzysztof received his VDC certification from Stanford University, his thesis on the use of hackathons as part of ICE meetings was named one of the best in the certification programme. He was also invited to present the results of the work on the 'Randselva Bridge' at the Stanford Summer Program in 2020. There is absolutely no doubt that Krzysztof's expertise helps put Sweco and Norway on the international BIM map.

Today, Krzysztof is involved in many of Sweco Norway's largest infrastructure projects and he collaborates closely with colleagues across national borders to further develop his skills in parametric design. His cultural understanding and genuine curiosity provide him with a unique ability to connect with the people he works with and he listens to and identifies the needs and challenges of clients. He has a unique ability to look ahead, is committed to interdisciplinary collaborations and can see the benefits his work in structural technology can have for other disciplines.

Contribution to the specific project E6- Arnkvern Moelv

Krzysztof has played an important part in several of our projects. In the 'E6 Arnkvern – Moelv' motorway project, his parametric design expertise has resulted in the development of a method for the parametrisation of the modelling of the design and reinforcements in tunnel portals. He has also developed a program for rapid modelling of double-arch surfaces in portals, including the optimisation of reinforcements. The method results in a time saving of around 50% compared to traditional calculations and modelling. The product is now available to all Sweco employees and is used in national and international projects.

Contributions to consulting engineering industry

Krzysztof is an important driving force in model-based design. In 2017, he was responsible for the first European drawing-less bridge project to be approved by the road authorities and built on the

basis of a model. Since then, he has participated in standardisation work and is dedicated to sharing his knowledge of model-based projects.

His dedication helps move the engineering industry forward. He participates in national and international forums to further develop tools and makes his knowledge available to others through external lectures and as an active communicator on social media. His work is drawing international attention and he has become a sought-after speaker for large international conferences. His aim is to share experiences from completed, model-based projects and to standardise the work so that the methods and templates are made available to others within the industry.

As of today, he has shared his experiences with like-minded individuals in the Nordic region and has also been collaborating with engineers in South America who wish to use the drawing-less method in their projects.

Contributions to consulting engineering industry

Krzysztof is an example to follow when it comes to putting the consulting industry in the spotlight. He is a talented and, not least, active communicator who happily shares the knowledge he has gained. He is an expert in adapting his message to the audience and the format, allowing him to benefit from great engagement on social media, receive excellent feedback from talks, be invited to write articles for international magazines, be a sought-after trainer, a guest on BIM podcasts and develop relationships across national borders.

Through his communications, recipients always receive specific examples of how the tools can be used and he refers to project planning examples that both inspire and engage audiences through various interfaces and forums. In 2020, he won the 'Best Talk' award at Norway's most important conference on new technology in the construction industry, DTK2020, which once again underlines his immense ability to communicate and promote technology within the industry.

Krzysztof is happy to share his knowledge and is one of the founders of the 'BIMCorner' blog. The aim of the blog is to spread knowledge of BIM technology and its practical application in construction projects. In just one year, the blog has become one of the most popular blogs in the industry worldwide, with more than 100,000 visitors from 190 countries. The posts generate great interest and are shared on social media all over the world. For many BIM enthusiasts, BIMCorner is the only opportunity they have to see practical applications of the method and actual implementations of drawing-less projects in Scandinavia. Through the blog, Krzysztof helps challenge the working methodologies in the construction and civil engineering industry across large parts of the world.

He also has his own YouTube channel, on which he demonstrates practical usage cases for parametric design and the Grasshopper program. Here, he shares his experiences and provides tips as to how Grasshopper can be used to improve efficiency in project planning. Krzysztof has also authored the guide: "5 Steps to Learn Grasshopper," which shows how you can learn parametric design. The guide is available for free and has been downloaded more than 6,000 times.

Name: Amund Geicke

Amund Geicke

Digitally signed by Amund Geicke
DN: cn=Amund Geicke, c=NO, o=Sweco Norge AS, email=amund.geicke@sweco.no
Date: 2021.03.24 21:05:57 +01'00'

Job title: Senior Vice President

Managerial relationship to candidate: His supervisor

Section B. THE PROJECT

B.1 Project description:

Randselva Bru is a 634m-long concrete box girder bridge being constructed using the balanced cantilever method. The construction is located near the city of Hønefoss, around 50km north-west of Oslo in an industrial center with several important factories. Hønefoss is located near the European route E16 – an important east-west highway that originates in the Swedish city of Gävle, runs through Sweden, Norway and continues into Scotland and Northern Ireland via ferry routes. The construction of the Randselva Bridge is part of a larger project by the Norwegian Public Roads Administration seeking to improve a section of the E16 highway. The bridge will connect the areas that are currently separated by the Randselva river. For the Randselva bridge, the chosen solutions are strongly influenced by the asymmetric shape of the river valley and the geotechnical challenges associated with large loose masses on the west side of the river. For this reason, reinforced friction concrete piles 1.5m in diameter were used for the first time on the road bridge in Norway. Moreover, challenging sulfate ground conditions in one of the axes forced the design team to advance calculations and use a non-conventional method for installing steel core piles through sulfate.

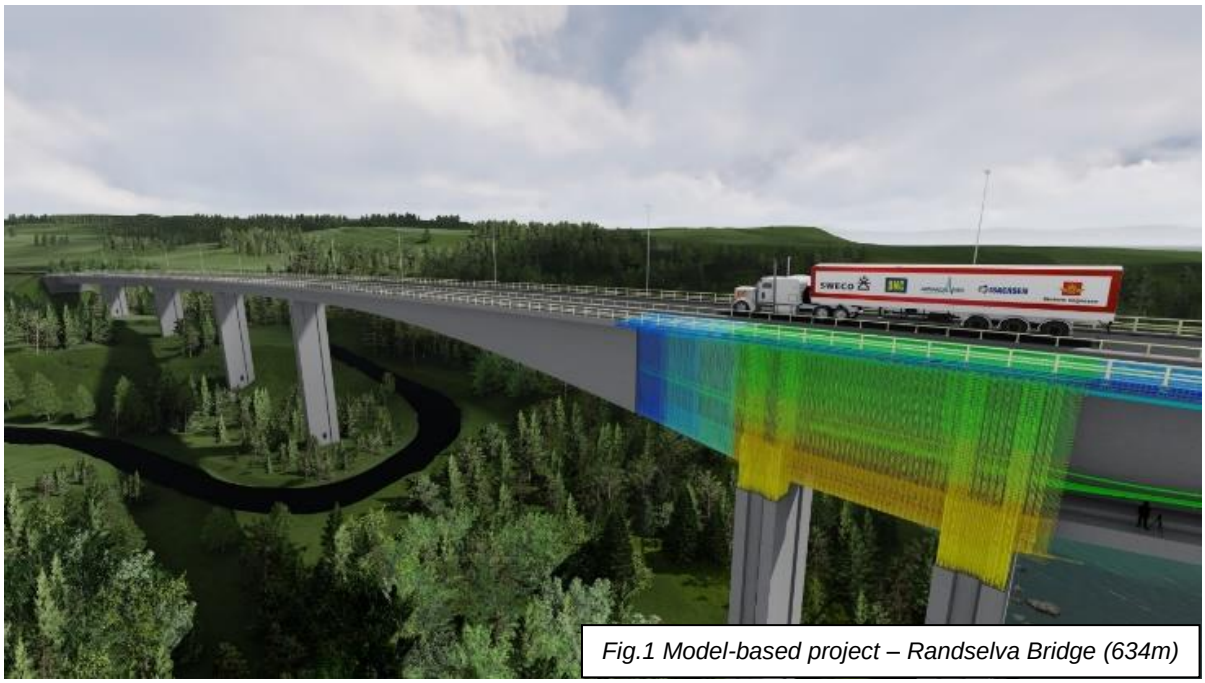

Fig.1 Model-based project – Randselva Bridge (634m)

The bridge has the main span of 200m and six piers that range in height between 5 and 42m. At its highest, the bridge deck will stand 55m above ground level, with the largest hammerhead measuring 13.3m in height, 14.5m in width, and 22m in length, resting on two piers. Two methods for concrete casting were applied. The first method, called the Movable Scaffolding System (MSS), was used because of two roads passing under the bridge towards the Kistefoss Museum and a busy railway track. The method was used from axis 4 to axis 8, and each span is 60m long. The second – a balanced cantilever method (between axis 1 and 4) – was used to reduce the impact on the Randselva river and the slope (protected green area) in the west. As a consequence, the bridge between axis 2 and 3 had to have an over 200m span with variable box height.

This project is a partnership between PNC as the main contractor, Isachsen as the groundwork contractor, and Sweco and Armando Rito as the design team. The form of the contract was "design and build" – total enterprise. Armando Rito was responsible for the concept design of the bridge and most of the detailed design. Sweco developed a detailed design for all foundations, pier piles and abutments, and all BIM modelling. The client is the Norwegian Public Roads Administration (NPRA). NPRA had encouraged the adoption of a model-based approach for this bridge. They observed a significant reduction in change orders since they have started demanding BIM models as a basis for

the drawings, and they were hoping that eliminating drawings would reduce the number of human errors. Since the acceptance of such model-based projects in 2016, the Norwegian authorities have been working closely with various industry players to assist in a smooth transition to BIM-only construction.

In October 2020, the 'Randselva bridge' project won the award for "Best BIM project on the globe" (for years 2019 and 2020) in the competition organised by Tekla Global BIM Awards. The project also won the award for World's best BIM project in infrastructure and was named Scandinavia's best BIM project. At the time of writing (March 2021) the design was completely finished. At the site, the substructure of the Randselva Bridge had been 100% completed and the first 20 cantilever concrete pours for the deck sections had been casted.

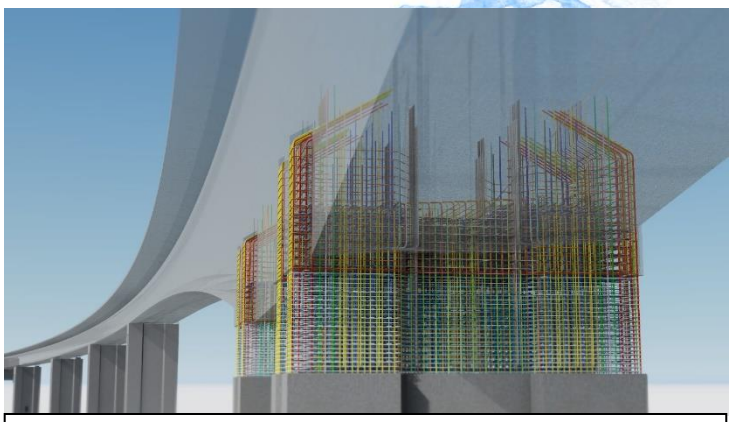

Fig.2 Model-based project – Randselva Bridge (634m)

Publications:

https://www.tekla.com/bim-awards/randselva-bridge
https://www.e-zigurat.com/blog/en/randselva-bridge-without-drawings/
https://www.theconstructionindex.co.uk/news/view/bim-for-bridges
https://aec-business.com/tekla-2020-global-bim-awards-winners/

B.2 Innovative characteristics of the project

In 2022, when construction will be finished, the Randselva bridge will be the world's largest bridge structure designed and built based entirely on a 3D model. A new approach to design and building forced all participants of the construction process to resign from traditional methods and drawings. This transformation required a change in the whole industry from suppliers, designers, surveyors, construction managers and workers to the client. The challenging but profitable process motivated the change of mindset and resulted in resignation from traditional 2D drawings.

"The groundbreaking Randselva Bridge project paves the road to the future of digitized construction."

Aarni Heiskanen, Construction Innovation Agent, member of the Tekla Global BIM Awards 2020 jury

The Randselva Bridge design team was the first ever to embark on a model-based project on this enormous scale. Until then, the maximum length of a bridge considered possible to build without the use of drawings was around 50m. Not very impressive when compared to the 634m length of the Randselva Bridge. However, it was not only the size of the structure that was unprecedented. One of the challenges in the design process was the bridge's slender geometry, which the team tackled using parametric algorithmic design principles. The heavy reinforcement columns tops, more than 200 unique tendons, 200,000 rebars and more than 200 concrete pour phases made certain areas very

difficult to design. Each object in the Bridge's BIM model carried 50 information attributes, forming an immense body of data that is best handled in 3D, as opposed to drawing. 95% of this information was transferred to the contractor via IFC files. Thanks to the advanced 3D model and clash-free design, the contractor can extract bar bending lists from the files whenever needed. At the same time, automatic clash detection ensured that the design is buildable. These measures helped eliminate errors upfront, which translates into time and money savings on site, which is crucial regarding the project's tight schedule.

Each site team is equipped with tablets for access to the relevant parts of the BIM model, which can also be accessed from the computer terminals housed in shipping containers on site. Furthermore, to maximise knowledge sharing and efficiency, PNC encourages matching the computer skills of the younger workers with the extensive practical knowledge of those more experienced.

The model-based approach also allows the design team to use new technology, including augmented reality. AR, for example, enables a virtual version of the next building sequence to be overlaid on what has already been built. On the Randselva Bridge, this technology is being used to plan and install pipes and reinforcement, as well as to control scaffolding and pile positions. Being able to visualise the design on-site, with down-to-the-millimeter accuracy and without the time-consuming help of a surveyor, is priceless.

Fig.3 Usage of AR (Artificial Reality) at the construction site - Site Vision

B.3 The FL's role in, and specific contribution to, the project:

On the Randselva Bridge project, Krzysztof was a leader on the international parametric design team. Thanks to his decision to use parametric design, nearly 70% of the BIM model was created using the new approach. With the help of parametric design, the redesign could be adopted to new road lines within days. The same applies to revisions on reinforcement, tendons and form. To put it into perspective, revising the road alignment late in a drawing-based project would normally mean months of rework. As a result, the parametric design team could start working on the project 2 months before the planned kickoff and prepare models that could easily be adapted to changes. In addition to that, parametric design scripts eliminate human errors due to fatigue or carelessness. Since principles can be applied to other projects, Krzysztof shared them with Sweco units in other countries so that they could use the script in similar projects.

In the Randselva Bridge project, Krzysztof together with his team built the tools based on the contractor's requirements and took into account all the challenges that might emerge from these requirements. Continuous work side by side with the contractor and client leads to the development of a new method for conducting design meetings. ICE (Integrated Concurrent Engineering) meetings were combined with parametric design hackathons, where Sweco's top experts from several countries developed new plugins and programs that made it possible to deliver the model's complex design. Recognising the tremendous potential of this new form of meeting, Krzysztof organised three

subsequent 3-day-long hackathons for the parameterisation of the bridge model. Parameterisation was important, not only from the technical perspective, but also as a crucial link in the communication between client and contractor. The hackathons make room for interdisciplinary input and comments from the contractor and client, which can be implemented in a couple of hours since all participants of the construction process sit together in one room.

Fig.4 Hackathons combine with ICE - Integrated Concurrent Engineering

B.4 Communication with the client/end user:

Good communication with the contractor (PNC) in the project was crucial mainly because the contractor had never completed a model-based project before. In this case resigning from drawings was not mandatory, but to make it possible, the main contractor had to be convinced, and that was Krzysztof's task. Krzysztof's experience on the E6 project Ankværn-Moelv (2017), where 40 model-based bridge structures were designed and built (including Berg Bru, which was the first bridge in Norway to be built without the use of drawings) demonstrated this method's huge potential and brought tangible results to the contractor. Krzysztof wrote and prepared the offer to the client and participated in the contract meeting. His calm attitude, great experience from previous projects and pedagogical presentation convinced the clients. Krzysztof was able to utilise his communication skills to evoke the client's trust in his team during the planning process.

Convincing the contractor and the client that the new method was working was one thing. Using a 3D model to build and maintain a structure after erecting it was another. Trust in his team was strengthened when Krzysztof made it possible for the contractor and client to use the created BIM model. To do this he organised a

Fig.5 Award ceremony - Tekla Global BIM Awards 2020

training session for all future users, significantly reducing any uncertainties and doubts about using models.

During the construction stage, when redesigning was required because of significant changes in forces on the scaffolding system, Krzysztof was ready to act. Due to limited time for changes, the redesign had to be done immediately. After attending several consecutive meetings, Krzysztof presented 5 solutions within a few days with the use of parametric design that can be done on site. Thanks to this, the client could easily assess and choose the best and optimal solutions.

B.5 Describe the project end results and the benefits to the client/end user:

Model-based projects bring a number of benefits.

The obtained BIM model became very important in the operation and maintenance of bridges. Combining these models with inspection and sensor data enables owners to plan maintenance in a more structured way, while also facilitating the identification and monitoring of reoccurring flaws. An updated BIM model will help owners understand the symptoms of ageing and the causes of damage.

Fig.6 Construction phase of Randselva Bridge

Randselva's cloud-based model improved accessibility and sped up communication, as the most updated design is available for everyone to see, instantly. Moreover, clashes or adjustments can be identified more easily in a BIM model, decreasing the number of unexpected issues on site, which are often expensive and time-consuming. The great quality of the model led to a reduction of questions from site to designer by almost 80%, and thanks to the ordering of reinforcement and materials directly from the model, the costs of reordering were reduced by 50%.

Drawings are often country-specific, while the information in a BIM model is more universal. This makes cross-border cooperation easier than it used to be. As a result, the client does not have to use national resources but can instead use experts from all over the world. Integrated Concurrent Engineering (ICE) meetings connected with a parametric design hackathon allows at least 3 times more iterations of the model and thus choose the best solution. Moreover, due to the parametric approach with its simple adaptation to changes, the design team could start working on the project 2 months ahead of schedule.

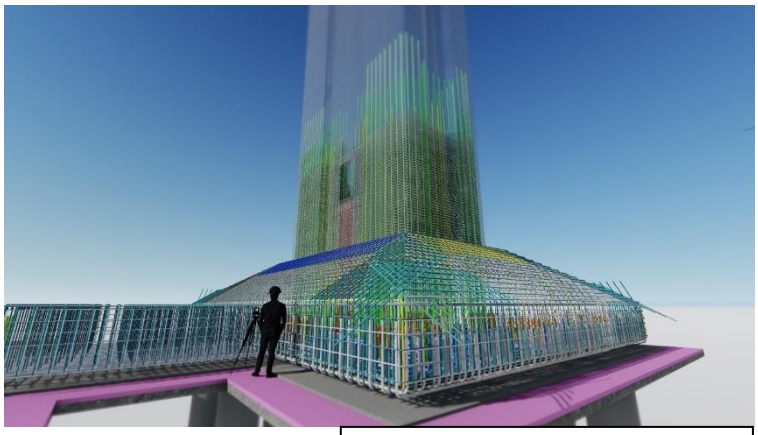

Fig.7 BIM Model of the foundation

Section C. CLIENT'S APPRECIATION OF THE CANDIDATE

Konrad Naborczyk – Design manager for the Randselva Bridge at PNC Norge

Krzysztof was involved in the project in the early phase of the tender stage. The main contractor, PNC Norge, was considering using a model-based design and execution for the first time on an infrastructure project. Working as a design manager, I asked the main designer, SWECO, for a meeting to present their experience within this field. There I met Krzysztof, who with his enthusiasm and a professional approach showed me SWECO's experience from a previous infrastructure project, E6, where Krzysztof was responsible for creating BIM-models and using parametric design. Krzysztof made such a good impression that after the meeting, we decided with the PNC's director to execute the E16 Eggemoen-Olum project totally model-based.

Since that time Krzysztof played a major role within the design team, doing his best to not only create models with a high quality and all necessary information, but also understand the contractor's needs. In this he has distinguished himself as a person with great communication skills, being able to talk with different project members. He participated in different meetings, both internally, between SWECO and PNC Norge, and externally, with our client, subcontractors, and suppliers. I am confident to say that thanks to Krzysztof, his openness to help and do a good job, in addition to his ability to cooperate with everybody in a friendly manner, we were able to solve many possible problems before they could get serious.

Working as the main contractor, I was really happy to have Krzysztof on our team. I could put all my trust and considerable responsibility on him and was never let down by the results that he provided. As a very good engineer, Krzysztof was utterly interested in the progress of the construction site and the way the main contractor works. Thanks to this, and an understanding that some decisions on the project take time, such as deciding on a technical solution or choosing a supplier, Krzysztof used an innovative way of design on part of the structure - the parametric design. This method proved itself as effective and cost- and time-reducing, helping avoid a rework, redesign or stoppage on the construction site.

Another innovation during the design was introduced via a hackathon, namely a meeting of SWECO's key engineers from different countries involved in the project with the aim of finding a better method and solution to a particular topic. Krzysztof understood the importance of good cooperation and made sure to involve the main contractor's representatives, myself among them. In those meetings I could see Krzysztof's leadership potential and the structured way that he managed the issues. As it was the first model-based project for PNC, Krzysztof also organised a training session for the main contractor's staff members and blue collars.

I can give my best and sincere recommendation for Krzysztof as a designer, project member and person. His dedication, work ethic, professionalism, combined with his friendliness and willingness to think outside the box, proved to be a most valuable asset. If you have any questions, please do not hesitate to contact me. You may reach me at konrad.naborczyk@skanska.no or +47 906 898 95.

Name: Konrad Naborczyk

Signature:

Job title: Design manager.

Company: at the time of the collaboration with Krzysztof: PNC Norge. Currently Skanska Norway.

Stanford | ENGINEERING
Civil & Environmental Engineering

Martin Fischer
The Kumagai Professor of Engineering

March 22, 2021

Re: Appreciation of Krzysztof Wojslaw for consideration of the Future Leaders award by EFCA

To: EFCA Future Leaders evaluation committee

Dear evaluation committee:

I recommend Krzysztof Wojslaw for the Future Leaders award by EFCA with the strongest enthusiasm. I am the Kumagai Professor of Engineering at Stanford University and have been a professor of Civil and Environmental Engineering on the Stanford faculty since 1991. I have been directing the Center for Integrated Facility Engineering (CIFE) since 2000. CIFE brings together academics and industry leaders from owner, consulting, construction, and technology companies in all sectors of the AEC (Architecture, Engineering, Construction) industry to invent the next practice of creating a high-performing built environment. I also serve as Senior Fellow of Stanford's Precourt Institute for Energy and have been the leader of the Sustainable Design and Construction graduate program at Stanford since its inception over 10 years ago. Hence, I am well aware of global trends and drivers with respect to technology, in particular digitalization, demographics, and all aspects of sustainability.

I recommend Krzysztof so highly for the Future Leaders award by EFCA because he was the mastermind behind the model-based (i.e., without drawings) delivery of the Randselva Bridge in Norway. This is the largest project delivered to date without flattening the structure to a 2D representation for design documentation, which then requires re-imagining the project in 3D by all the builders. This is a lighthouse achievement for consulting engineers – I would even go so far to say "the lighthouse achievement in recent history" – because it demonstrates the increased value that can be offered by consulting engineers by using digital building models that are connected to project performance and management concerns. I learned about Krzysztof's visionary leadership role on this project through the first large-scale VDC (Virtual Design and Construction) Program I ran for 200 Norwegian professionals with the support of Prof. Eilif Hjelseth from the Norwegian University of Science and Technology and professional VDC experts from August 2019 to May 2020. Krzysztof was one of the 200 professionals in the program. Even though he was one of the youngest participants, his application of VDC quickly stood out because of its bold ambition, visionary leadership, pervasive deployment, and exceptional technical quality.

Krzysztof's work put into practice what many had been dreaming about, namely that digital building models could eliminate a number of non-value-adding tasks currently done and add value to the client through the deliverables of consulting engineers. For example, he showed the following applications and improvements of the digital bridge model for collaboration and process:

Y2E2 Building, 473 Via Ortega, Stanford, CA 94305, T +1-650-725-4649, fischer@stanford.edu

Collaboration: Thanks to the development of the parametric BIM (Building – or, in this case, Bridge – Information Model) and its integration with other digital design evaluation and project management tools, the client (Statens Vegvesen) and the contractor (PNC) could, together with the consulting engineer, rapidly, i.e., in project meetings, explore different design options and understand consequences, in particular with respect to cost, of different design ideas and options. This real-time, model-based collaboration between the main project parties created a higher quality design solution in less time and increased the trust between project team members.

Process: The well-coordinated BIM that represented the design solution delivered by the consulting engineering that had been crafted with the input of the consulting engineer, client, and contractor led to time and cost savings during construction. For example, questions from the construction site to the consulting engineer were reduced by 80%, which freed up the consulting engineer's staff for more value-adding work than answering questions that should not need to be asked in the first place. Furthermore, the well-organized BIM could be easily connected to the construction schedule to turn the 3D model into a 4D model (x, y, z, and time), which then allowed the ordering of the right amount of rebar and other materials in the right amounts at the right time, dramatically reducing the procurement costs and leading to a less cluttered construction site and more productive construction work.

These project benefits are the direct result of Krzysztof's visionary and outstanding leadership in what's possible with digital technologies today – if one chooses to really apply them. They show how consulting engineers can not only maintain, but actually increase, the value they add to a project for the other two main parties – the client and the contractor. The open up a world where building projects are more predictably and more often high-performing!

Because of this achievement, I invited Krzysztof to present the digitalization of and its impact on the Randselva Bridge at CIFE's annual conference last September. The conference brought together 64 world-leading professionals from all roles and sectors of the industry. Krzysztof's presentation of his and his team's accomplishments and their implications stood out from all the others in terms of clarity and insight. It was, frankly, the highlight of the conference, showing the hundreds of conference participants that the future that many had been dreaming about can already be reached with strong leadership.

This truly exceptional result would not have happened with Krzysztof Wojslaw's leadership. Hence, he deserves utmost consideration for the Future Leader's award, and I genuinely hope that he'll be selected.

Sincerely,

Martin Fischer

Martin A. Fischer
The Kumagai Professor of Engineering at Stanford University
Professor of Civil and Environmental Engineering
Director of the Center for Integrated Facility Engineering
Leader of the Sustainable Design and Construction Graduate Program
Senior Fellow of the Precourt Institute of Energy
Senior Fellow of the Design Futures Council
Member of the National Academy of Construction
Foreign Member of IVA, the Royal Swedish Academy of Engineering

Fig.7 VDC Certificate ceremony, Oslo 2020

Section D. CV OF THE CANDIDATE

Curriculum Vitae

Personal information	
First name(s) / Family name(s)	**Krzysztof Wojslaw**
Business Address	Drammensveien 260, 0283 Oslo, Norway
Phone number(s)	+47 92800551
E-mail address	krzysztofwojslaw@sweco.no
Nationality	Polish
Date of birth	02.05.1990
Work experience	
Dates	10.08.2019 - present
Occupation or position held	Co-Founder of BIM Corner
Main activities and responsibilities	BIM Corner is a blog mainly focused on Building Information Modeling technology. The main goal is to spread knowledge in the field of BIM and its practical use in construction projects.
Name and address of employer	BIM Corner
Type of business or sector	Blog and Youtube Channel
Dates	01.08.2016 - present
Occupation or position held	Parametric design and VDC Expert
Main activities and responsibilities	- Leading parametric design development team in Norway, - Involved in Nordic co-operation to standardize work methodology and software, - Coordination of international projects (Cross border cooperation) - Creating and coordinating BIM models and integrations with different software's, - Implementing new design methods and solutions for bridge constructions, - Lectures/courses: Introduction to parametric Design - Grasshopper and Tekla Awarded the prize "Young Consultant of the Year" by the Norwegian Association of Consulting Engineers (RIF) in 2020, for the role as an expert in parametric design and VDC, as well as sharing experiences with the industry.
Name and address of employer	Sweco Norway, Drammensveien 260, 0283 Oslo, Norway
Type of business or sector	Bridge Structures

Dates	01.06.2014 - present
Occupation or position held	Designing leader
Main activities and responsibilities	- Designing concrete and steel structures, - Managing international designing team, - Preparing technical solutions, - Presenting professional expertise in the early project phase - Performing static calculations related to design of commercial buildings, bridges, and tunnels
Name and address of employer	Spenncon AS, Ingvald Ystgaards veg 23, 7047 Trondheim, Norway
Type of business or sector	Building Structures
Education and training	
Dates	01.08.2019 – 17.05.2020
Title of qualification awarded	Certificate - Virtual Design and Construction (VDC)
Principal subjects/occupational skills covered	VDC is a framework that contributes to more interdisciplinary collaboration, digital support/use of BIM, improved work processes and goals management. It is documented that VDC contributes to increased quality, reduced implementation time and reduced costs.
Name and type of organisation providing education and training	Stanford University
Level in national or international classification	5 Short-cycle tertiary education (ISCED 2011 levels)
Dates	20.07.2013 – 15.07.2014
	Student exchange program
Principal subjects/occupational skills covered	- Fatigue and Fracture of Marine Structures - Structural Design, Advanced Course Concrete Structures 2 - Finite Element Methods in Strength Analysis - Structural Design, Master's Thesis: Nonlinear and Time-Dependent - Analysis of a Concrete Bridge Suffering from Alkali-Silica Reaction A Case Study of the Elgeseter Bridge in Trondheim
Name and type of organisation providing education and training	The Norwegian University of Science in Trondheim
Level in national or international classification	7 Master's (ISCED 2011 levels)
Dates	01.02.2013 – 23.10.2014
Title of qualification awarded	Master's degree
Principal subjects/occupational skills covered	Bridges and civil engineering structures
Name and type of organisation providing education and training	Gdansk University of Technology
Level in national or international classification	7 Master's (ISCED 2011 levels)
Dates	01.09.2009 – 28.01.2013
Title of qualification awarded	Bachelor's degree

Principal subjects/occupational skills covered	Bridges and civil engineering structures
Name and type of organisation providing education and training	Gdansk University of Technology
Level in national or international classification	6 Bachelor's (ISCED 2011 levels)

Mother tongue(s)	**Polish**
Other language(s)	

Self-assessment	Understanding		Speaking		Writing
European level (*)	Listening	Reading	Spoken interaction	Spoken production	
Norwegian	C1	C1	C1	C2	C1
English	C1	C1	C1	C2	C1
Spanish	A2	A2	A2	A2	A2

Social skills and competences	Cooperation and teamwork, cultural understanding, team management, ambitious, creative, maintaining client relationships.
Organisational skills and competences	Problem-solving, commercial awareness, decision making, planning skills, orientation and goal-driven.
Technical skills and competences	Virtual Design and Constriction, Parametric Design, BIM developer, 3D modeling, Bridge design and analysis.
Computer skills and competences	Software Expert: Tekla, Rhinocores, Grasshopper, SketchUp, Solibri, SOFiSTiK, SiteVision, Robot, AutoCad Software specialist: Analytics, Microsoft Office package, PowerBI, Camtasia, Adobe Premiere, DaVinci, Gimp, Novapoint, Quadri Programing skills: Phyton and Visual Basics
Other skills and competences	Public speaking and knowledge sharing
Hobbies and activities	Triathlon, Bike-packing, Hiking, Blogging, YouTube channel,
Papers published	• Drawings elimination from the project of expanding the expressway in Norway, ISSN 0137-2971, 7/2019 (nr 563) Other Authors: Adam Nowokuński • What is Virtual Design and Construction? VDC definition Published February 3, 2020 https://bimcorner.com/what-is-virtual-design-and-construction/ • 5 steps to learn Grasshopper – Published November 2019 https://bimcorner.com/wp-content/uploads/2020/11/How-to-learn-Grasshopper.pdf • Top 12 benefits of BIM technology – Why should I use BIM? Published at August 11, 2019 https://bimcorner.com/benefits-of-using-bim-technology/ • And more on https://bimcorner.com/krzysztof-wojslaw-en/

Public speaking experience

Keynote speaker, international conferences and events:

- BILT Europe 2019 - Title of the speech: Tekla and Grasshopper – perfect duet in infrastructure Projects – Edinburgh 2019
- Stanford Summer Program 2020 - Title of the speech: Application of emerging technologies to support collaboration - Randselva bridge.
- InfraBIM 2020 – Gliwice (Poland) 2020 - Title of the speech: How parametric design is used in construction projects in Norway.
- Hello BIM – Sopot 2019 – Title of the speech: Model-based design with the use of Parametric design
- Hello BIM – Warsaw 2019 - Title of the speech: Model-based design with the use of Parametric design
- Anglian Water Alliance Event 2019 – Title of the speech: Application of parametric design in diverse disciplines – Whittlebury UK 2019
- Designing the future 2019 - Title of the speech: Extension of the E6 expressway in Norway. Cross-border cooperation without drawings – Krakow 2019

National events:

- Bridge conference - BIM og Bru – Title of the speech: Bergen 2021
- uRIF fagkveld -– Title of the speech: A new generation of engineers is coming now - Oslo 2021
- Parametric design Seminar 2020 - Title of the speech: Randselva Bridge - the world's biggest bridge designed and built without drawings - Oslo
- Den Kloke Teknologi 2020 – Title of the speech: PIMP my ICE on Radnselva Bridge
- Trimble Brukerdag 2019 - Title of the speech: Tekla and Grasshopper – perfect duet in infrastructure – Lillestrøm 2019

Other presentations:

- 20 online webinars for co-workers and leaders
- 10 professional Grasshopper and Tekla courses