

Strategic Innovation Programme – Smart Built Environment Call for Proposals

Digital built environment in practice

Smart Built Environment is part of a collaborative initiative in strategic innovation programmes by **Vinnova**, the **Swedish Energy Agency** and **Formas**. The programme is in its fifth year, and this call for proposals belongs to a series of major annual calls that began in 2019. In the call, grants can be sought for innovation ideas or for major research, development or innovation projects. The purpose of strategic innovation programmes is to foster international competitiveness and sustainable solutions for global societal challenges. Read more about [strategic innovation programmes](#) on the Formas website.

For more information about this programme, visit the [Smart Built Environment website](#).



Revision history

Any changes to the call text are listed below.

Date	Change

1 The call in brief

This call for proposals aims to contribute to the sustainable development of the built environment, through projects that centre around digitalisation and industrial processes. Applications can address processes, forms of collaboration, business models, technology or a combination of these. The purpose of the call is to accelerate digital transformation through activities that involve stakeholders throughout the value chain, from planning to the long-term management of the built environment. The current pandemic has sparked the realisation that a swifter transition to a more sustainable society through digitalisation is achievable. At the same time, there is a tendency to focus on short-term solutions for coping with the current situation. Projects should leverage the capacity to quickly transform, as society has demonstrated, together with a focus on the long-term impacts of the solutions. The call therefore focuses on projects whose results can be implemented in the near future, are resource-efficient and scalable, and can be widely applied in spatial planning. Smart Built Environment specifically encourages projects that enable and incentivise new business or operational models, innovative forms of collaboration, and new or developed value chains.

The projects considered for a grant award must:

- Clearly contribute to Smart Built Environment’s impact logic, with a focus on the sector’s digital transformation.
- Clearly promote the sustainability aspects of reduced climate impact and increased equality in the built environment.
- Be scalable and applicable in different environments (for example, in municipal or regional planning and permitting processes or in construction and infrastructure projects).

The projects should address at least one of the four thematic areas (see 2.2). They should help to achieve the impacts and objectives identified in the programme’s impact logic (see Appendix 2).

The call provides funding of slightly over 30 million kronor and requires co-funding for each project of at least 50 percent of project costs. “Digital built environment in practice” is being implemented in two sub-calls:

- **Innovation ideas.** Here, you can apply for a grant of up to 500,000 kronor and at least two project parties are required. The maximum project duration is 12 months. You can apply for a grant to cover a feasibility study for an early idea or for testing a developed idea on a smaller scale, preferably based on previous project results within Smart Built Environment.
- **Research, development or innovation projects.** Here, you can apply for a grant between 500,000 and 4 million kronor. A project’s total budget, including co-funding, must therefore be a minimum of 1 million kronor.

At least two parties must participate in the application. The project duration is 12–48 months. You can apply for a grant to cover a research, a development or an innovation project.

Assessment criteria: The Smart Built Environment calls use the following assessment criteria: relevance, potential, implementation and organisation. The criteria are assessed using the same scale as for Formas' other calls.

The principal applicant is the organisation that coordinates the project and is called an administrating organisation. This must be a Swedish organisation. At least one project party must be an end user with a clear goal to test and use the solution the project intends to develop. Each project party must be a legal entity with a unique corporate identity number.

The call places great emphasis on carrying out the project through concrete collaboration among different parties, including the project's end users. Furthermore, great emphasis is placed on consideration of gender equality and diversity both in the project team and within the problem area and real-world impact of the solution.

Formas has recently updated its application process and associated system support for this call. Please read the instructions carefully, even if you have previously applied for a grant under a Smart Built Environment call.

A webinar focusing on how to search in Prisma will take place at the end of January. You can also get individual support via chat or telephone during the last week before the call closes.

The following dates apply for this call:

Please note that all dates are preliminary. For the latest information about the call, see formas.se.

Opening date	4 November 2020
Application deadline	4 February 2021, 14:00 CET
Date of decision	26 May 2021
Project start, at the earliest	1 August 2021
Project start, no later than	1 December 2021

Questions about the background, purpose and desired effects of the call:

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2 Objective of the call

2.1 Background

The Smart Built Environment strategic innovation programme is a platform that brings together stakeholders across the entire built environment sector to achieve the overall objectives and impacts of the programme for a more resource-efficient built environment. Throughout society, a digital transformation is underway that is already affecting processes and stakeholders in the sector.

It is clear that society is facing a series of global changes that the entire built environment sector must adapt to. We as individuals, private and public actors, and society at large have also changed our own behaviours in everyday life in a way that few thought possible before the pandemic. The issue of sustainability is central here, and so is the aspect of equality as our socio-economic relationships change. This means that Formas places great emphasis on gender equality considerations both in the project team and within the problem area and real-world impact of the solution.

The sector must ramp up the transition to new work approaches and methods. There is great potential to harness the momentum of the ongoing transition, which mainly involves short-term measures, in order to transform the built environment for the longer term. The necessary changes take time to implement, and a key part of the development is thus to implement and scale up many of the research-based solutions already underway or available as prototypes. Knowledge dissemination, knowledge transfer and, not least, perseverance are important.

Digitalisation and digital transformation, together with the development of industrial processes, are key issues for achieving a sustainable built environment for the long term.

Both within and outside the programme, digitalisation and industrialised construction are advancing at a rapid pace. The results of completed activities and projects as well as the ongoing programme activities, together with developments abroad, have brought about new technological solutions, methods, work approaches and collaborative partnerships. Collaboration within the sector and with other sectors aligns resources and lays the foundation for developing sustainable business models. Innovation will be crucial for achieving the goals for sustainable development. Various initiatives are planned and already underway that strive to achieve set climate goals in Sweden and around the world. One example is the roadmaps developed by several sectors for ending our dependence on fossil fuels. These roadmaps have identified several key areas to investigate, and there is great potential for collaboration around these activities.

2.2 Purpose and focus

With this call, Smart Built Environment intends to fund projects that clearly accelerate the transition to a sustainable built environment, with digitalisation and the development of industrial processes as major enablers.

The projects considered for a grant award must:

- Clearly contribute to Smart Built Environment's impact logic, with a focus on the sector's digital transformation.
- Clearly promote the sustainability aspects of reduced climate impact and increased equality in the built environment.
- Be scalable and applicable in different environments (for example, in municipal or regional planning and permitting processes or in construction and infrastructure projects).

Smart Built Environment encourages applications for projects in which multiple stakeholders collaborate and develop solutions that show commercial potential, as well as create the foundations for new forms of procurement, business models and/or application areas for new digital approaches. We would like to see projects that can achieve real change for the sector's stakeholders, both at the individual and the organisational level. This means that we welcome projects that implement previously developed solutions (processes, organisations, technology, etc.) or enable upscaling. When applicable, the projects must also have a clear plan or idea about what is required for long-term development or management after the project is completed.

Two important sustainability considerations are reduced climate impact and the project's ability to promote greater equality in society through the expected results.

The impact logic (see Appendix 2) contains the following five impact areas, each containing several individual impacts. The projects should clearly address these so that we together create the many puzzle pieces that aim for the same goal.

- Improved information flow
- Streamlining
- A climate change perspective
- Knowledge development and innovation
- Digital transformation

The programme wishes to encourage international collaboration, stimulate the innovative capacity of more stakeholders, and create unexpected solutions that contribute to the overall vision and impact targets of the programme.

3 Who can apply?

The call is targeted to private companies, public-sector organisations, higher education institutions and research institutes. At least two parties must participate in the application. The project manager can come from a private company, public-sector organisation, a higher education institution or a research institute. At least one of the participating parties must work at a private company **or** a public-sector organisation.

Innovation ideas

This part of the call is aimed at companies and organisations that have an innovation idea and a need to test feasibility, which can lead to a larger development or innovation project. It is also aimed at companies and organisations that have developed an idea and need small-scale tests for implementation or scaling-up in daily operations. One of the parties should be an end user.

Research, development or innovation projects

This part of the call is targeted to consortia of organisations such as private companies, public-sector organisations, higher education institutions and research institutes. At least one of the parties must clearly be an end user who can test the solution within the framework of the project.

Smart Built Environment welcomes applications from all interested organisations and companies, preferably in collaboration with new partners. Especially interesting for this call are consortia with start-ups that can help to develop new work approaches, business models and technology as well as end users such as property owners, municipalities or construction companies.

Project participants from outside Sweden are welcome to contribute their time or other resources as a project co-funder. International project participants can also receive a limited part of the grant, according to the research funder's rules. However, participants outside Sweden may not be project managers.

Smart Built Environment and Formas strive for an equitable, gender-equal and inclusive built environment. This means that grant applicants should design the project so that its results can benefit a diverse group of people and build a project team that takes into account gender distribution and different backgrounds. You should consider not only the number of people, but the distribution of power and influence in the project.

4 What is funded?

4.1 Activities eligible for funding

Innovation ideas:

In this part of the call, we would like to see applications for the following:

- Grants for a feasibility study of an idea
- Tests of a previously developed solution in a smaller pilot or demonstration project

Research, development or innovation projects:

In this call, we would like to see applications for the following:

- **Implementation and educational initiatives**
Examples include original ideas for awareness-raising and knowledge-building, activities that reach out to the many stakeholders and operators in the built environment sector. The project should preferably complement traditional education.
- **Test beds and demonstrations**
Examples include the creation of test bed environments – virtual or physical – and demonstrations of the results from research and development projects, such as results from previous projects within the programme. We particularly welcome applications for system demonstrators in which several previous results are demonstrated in a common environment.
- **Research and development projects**
Projects containing different levels of research and innovation, such as Ph.D. students or postdocs, or the development of research results for increased commercialisation.
- **Literature reviews and syntheses of completed projects**
Activities that complement the overall syntheses that are part of Smart Built Environment's coordination efforts. This can include results and syntheses from two or more projects implemented in the programme or in other initiatives.
- **Miscellaneous**
The use of different forms of collaboration that improve the potential of the sector to benefit from digitalisation. An example of this is innovative competitions that aim to achieve disruptive innovations and increase the appeal of the built environment sector. Implementation of hackathons and crowd learning events are other examples of such activities.

4.2 Project duration

Innovation ideas can be a maximum of 12 months, and the project duration for **research, development or innovation projects** is 12–48 months. Projects can start on 1 August 2021 at the earliest and 1 December 2021 at the latest. Projects must be completed by 30 November 2025.

Projects have an availability period of three months after the end of the project duration. The project duration can be extended in specific cases if there are special circumstances that are approved by the project manager and administrating organisation, such as illness or parental leave.

For projects that are 18 months or longer, a periodic financial report must be submitted each year. The form opens every year on 1 January, and the project manager then has three months to submit the report.

After the availability period for the grant is over, the project manager has an additional month to submit a final financial and scientific report. The manager must use the template provided by Formas to do this.

5 How much can you apply for?

5.1 Funding amount under the call

For the two sub-calls combined, Smart Built Environment has allocated programme funding of slightly over 30 million kronor. Applicants for **innovation ideas** can apply for 500,000 kronor, and **research, development or innovation projects** can apply for between 500,000 and 4 million kronor.

5.2 Funding types

There are four types of funding an applicant can specify in the application:

1. **Requested grant from Formas:** Indicates the amount requested from Formas within the framework of Smart Built Environment.
2. **Other aid (state):** Indicates any funding received from other state funders towards implementing the project.
3. **Other aid (private):** Indicates any funding received from other private funders towards implementing the project.
4. **Self-funding:** Indicates the project parties' own contributions in terms of time, money and other resources.

Requested grants from Formas may constitute a maximum of 50 percent of the total project budget. If other aid from state funders is included in the project budget, this aid together with the requested grant may constitute a maximum of 50 percent of the total project budget.

Self-funding and other aid from private funders together constitute the project's co-funding. This portion should amount to at least 50 percent of the total project budget. Project parties from the public sector who provide self-funding can be included in the co-funding. Contact Formas if you are unsure about what counts as co-funding (see the contact details in Chapter 1).

The project consortium may itself determine how to distribute the grants, costs and co-funding levels as long as the project as a whole is co-funded to at least

50 percent and complies with state aid regulations (see Section 5.3). A participating project party can thus (1) only apply for grants from Formas, (2) only contribute self-funding, or (3) apply for a grant *and* provide self-funding.

Funding for other aid (public or private) and self-funding must be secured when the application is submitted under this call.

See Section 9.24 for budget instructions.

5.3 State aid

Private companies and other organisations engaged in economic activity that want to apply for grants from Formas must follow specific regulations on state aid. The regulations are based on the principle of EU law, which states that aid to private enterprises normally distorts competition but that certain exemptions are allowed.

The aid intensity that Formas can offer depends on the size of the organisation and the type of activities in the project. The organisation's size is assessed using the EU definition of small and medium-sized enterprises. Activities will be primarily assessed on the basis of industrial research, experimental development or aid for process innovation or organisational innovation.

In addition, de minimis aid can also be a possible basis for granting aid. For projects in which this might be the case, Formas will ask the applicant to fill in a special form after the project is awarded funding.

The Formas website contains more information about state aid. Questions about state aid should be sent to Formas (see the contact details in Chapter 1).

[State aid regulations – for companies and other organisations engaged in economic activity](#)

6 Eligibility criteria for application assessment

In order to be eligible for assessment according to the criteria in Section 7.1, the following requirements must be met. The application must be written in Swedish or English.

- The project description should be written using the template provided on formas.se.
- The project parties must be legal persons.
- At least two organisations must participate as project parties in the project, of which at least one must come from a private business or the public sector.

If any of these requirements are not met, your application will be rejected. This means that the application does not proceed to review.

7 Assessing applications that meet the procedural requirements

7.1 What do we assess?

The projects that are awarded grants should help to achieve Smart Built Environment's impact targets (see Appendix 2). Applicants should **clearly** address the relevant impact targets and at least one of the four thematic areas. The application must indicate the impact targets and the thematic area addressed, and clarify how the project will achieve them.

Where there is a need for a strategy or plan for managing the project results, this must be clearly stated in the application. If there is a need for international anchoring or collaboration, this must also be described in the application.

Assessment criteria for the two sub-calls in “The digital built environment in practice”:

Relevance

- How well the project contributes to Smart Built Environment's impact goals.
- How well and in what way the project and selected initiatives help to solve challenges in the programme's thematic areas.

Potential

- The project's potential to achieve scalability, dissemination and use of the expected solution by built environment actors, such as municipalities, private companies and public-sector organisations in the construction process, and managers of the built environment.
- Potential of project results to promote greater equality.

Implementation

- The project plan for implementation, completion and application is fit for purpose and realistic.
- The project's communication and knowledge dissemination plan is fit for purpose and realistic.

Organisation and stakeholders

- Composition, expertise and overall ability of the actor constellation in relation to project objectives, activities and implementation. It is important that the end user take an active role.
- How well the team's composition (key people) reflects the distribution of genders, skills, experience and different perspectives on the built environment and digitalisation.

7.2 How does the assessment process work?

Summary of the decision-making process:

1. Applications that meet the procedural requirements (see section 9.1) will be assessed by external independent reviewers using assessment criteria. The applications will then be ranked and a recommendation for funding made.
2. Formas takes a decision on which projects are awarded funding.
3. Decisions are announced to the applicants and to Smart Built Environment's offices and published on the websites of Formas and Smart Built Environment.

8 Decisions and conditions

8.1 Formas' decision

The grant decision states the amount that each party in the project is awarded. Funding will be granted under the EU Commission block exemption Regulation GBER (EU no. 651/2014 and/or de minimis regulation (EU no. 1407/2013). The basis for the aid is stated in the decision and also governs which costs are eligible to be covered.

Formas' decision to award or reject an application cannot be appealed.

8.2 Terms and conditions for awarded grants

Formas' general terms and conditions for research and innovation grants apply for awarded grants. The terms and conditions include rules regarding payouts, follow-up, reporting and real-world impact of results.

Since the call takes place within the framework of the Smart Built Environment programme, there might be additional special conditions and instructions that regulate reporting, follow-up, communication, etc. for the programme. See smartbuilt.se (in Swedish only).

Additional special terms and conditions may be determined for individual projects.

Any party that does not comply with Formas' terms and conditions might be held liable to return funds. This also applies if the party has been granted an incorrect or excessive amount.

Reporting during the project

Smart Built Environment projects that are longer than 12 months must submit at least one financial report during the course of the project. Instructions on what applies to your project are provided by Formas. Your financial report should be submitted in the Prisma application system. Prisma automatically sends an email with a link to the project's administrating organisation in good time before you must submit your report. The financial reports also contain co-funding information as stated in a predefined template.

9 How to apply

Formas has updated its application process and associated system support for this call. Please read the instructions carefully, even if you have previously applied for a Smart Built Environment grant.

9.1 Procedural requirements

In the Smart Built Environment programme, organisations apply for funding to implement projects together in collaboration. Applying organisations must have a company registration number and be legal entities. Sole proprietors are therefore not eligible to receive funding.

At least two organisations must be included as project parties on an application. There is no limit to the maximum number of project parties. One of the applying organisations must be the principal applicant and is called the administrating organisation. Other organisations that participate in the project's design contribute to the implementation and share the associated risks and results. They should therefore be specified as project parties. Organisations that have a small role in the project, such as participation in workshops or reference groups, should not be specified as project parties but instead described in the project description.

The administrating organisation is the organisation that receives and distributes the funds according to the decisions taken. Being an administrating organisation means that Formas approves the organisation as the recipient of funds for research, development or innovation, and that this organisation is responsible for allocating funds to other applying organisations in the project.

Formas distinguishes between generally approved administrating organisations (mainly higher education institutions and research institutes) that can apply under all calls, and administrating organisations that are approved under an individual call. Formas welcomes organisations that are not generally approved administrating organisations to apply as coordinating project parties in Smart Built Environment. Decisions on approving new administrating organisations will be taken soon after decisions on the call to ensure that the decisions are based on recent data. Prior to taking a decision, Formas performs checks on the project

parties that apply for funding and engage in economic activity in order to assess their financial stability and ability to complete the project.

9.2 The Prisma application system

To apply for a grant from Formas, the project manager should submit an application online in the [Prisma](#) application system.

9.2.1 Apply for an organisation account

The administrating organisation that coordinates the project must have an organisation account in Prisma. If the administrating organisation already has an organisation account in Prisma, then that existing account can be used. If the organisation has a user account in Prisma but is not a generally approved administrating organisation with Formas, contact Formas and request to be added to the list of possible administrating organisations in Prisma (see the contact details in Chapter 1).

[Who can become an administrating organisation?](#)

If the organisation does not already have a user account in Prisma, an appropriate representative should request an organisation account on the Prisma website in good time, no later than 15 January 2021.

[Apply for an organisation account in Prisma](#)

Select *Formas* and specify in the reason for applying for an organisation account that you want to apply under Smart Built Environment. Other project parties do not need to create any user accounts in Prisma.

The application should be initiated through the organisation account. The person who is responsible for the organisation account then automatically becomes the project manager, but the manager can change this by inviting another person to become a project manager. If another person should be the project manager, that person must have a personal account in Prisma. If the manager of the organisation account should be the project manager, then no personal account needs to be connected to the application.

9.2.2 Create a structure to describe your organisation

The structure of an organisation must have at least one domicile because this information is mandatory when the applicant submits the application. Domicile refers to the department, institute or unit within the organisation applying for funding. See Prisma's user support for instructions on how to create a structure for your organisation.

[Describe the structure of your organisation](#)

When the applicant (the project manager) fills in the application form in Prisma, he or she must state the administrating organisation and domicile. This is done in the drop-down menus for **Administrating organisation** and **Project domicile**. The domiciles that the applicant can select are retrieved from the organisational structure based on the organisation account settings defined by the person in charge of the organisation account.

9.2.3 Find the call in Prisma

The two sub-calls are located on the organisation account tab in Prisma. Click that tab, and then go to the link for organisation calls. See Prisma's user support for instructions on how to find the call in Prisma.

[Find the call in Prisma](#)

9.2.4 Fill in the form with the application content

The application must be written in Swedish or English.

The following information is requested in the application. All sections are mandatory except for the reference list and justification of budget.

- **Basic information:**
 - Innovation ideas can be a maximum of 12 months, and the project duration for research, development or innovation projects is a minimum of 12 months and a maximum of 48 months.
 - Project start no earlier than 1 August 2021.
 - Project start no later than 1 December 2021.
 - *Estimated project duration:* The project duration is calculated automatically in Prisma, based on the start date and the number of months filled in.
 - *Project title in Swedish and English:* Maximum 200 characters per project title, including spaces.
 - *Abstract in Swedish and English:* A maximum of 2,000 characters per abstract, including spaces. The abstracts may be freely disseminated and published and so should not contain confidential or sensitive information.
- **Project description:** Maximum 10 pages. A project description template is available for download on formas.se. The project description should be uploaded as a file with a maximum size of 4 MB. Please do **not** include any budget in the project description.
- **List of references:** Maximum 2 pages. This part of the application is optional and can be used to list references that substantiate the project

description. The list of references should be uploaded as a file with a maximum size of 4 MB.

- **Thematic areas within Smart Built Environment:** Identify the theme or themes within Smart Built Environment that the project will primarily contribute to. At least one theme should be specified. Read more about these themes on [the Smart Built Environment website](#).
- **Budget for administrating organisation and project parties:** The budget itemises the costs and funds for the entire project (not just funding requested from Formas). The administrating organisation must fill in the information and budget for itself and each project party. Prisma automatically totals these costs and funds for the project as a whole.

This is mandatory information that must be completed for each party in the project. This information should be collected and filled in by the administrating organisation in Prisma.

- Name of the organisation
- Corporate identity number
- Address, postal code, city, country
- Annual turnover (the total sales or turnover of the higher education institution, research institute, company or organisation during the previous fiscal year), stated using digits. Example: 3 500 000.
- Balance sheet total (the sum of either the assets page or liabilities and equity from the company's or organisation's balance sheet), stated using digits. Example: 5 500 000.
- Number of employees
- Contact person
- E-mail of contact person
- Name of the workplace, address, postal code, city and country where most of the work will be carried out.

The following budget information is requested in Prisma:

Costs

- *Staff expenses:* Eligible staff expenses for project parties not affiliated with a university, college or research institute may be allowed at a maximum of 800 kronor per hour. Higher education institutions or research institutes are not subject to this limitation.
- *Equipment, land and buildings*
- *Consultancy and licensing costs, etc.*
- *Other direct costs including travel*
- *Indirect costs:* Overhead costs. Higher education institutions and research institutes may charge a markup for indirect costs according to the applicable full-cost pricing method. Other project parties may charge a

markup for indirect costs of up to 30 percent of their eligible staff expenses.

Funding

See Section 5.2 for a description of the four types of funding: (1) Requested grant from Formas, (2) Other aid (state), (3) Other aid (private) and (4) Self-funding.

Justify the project budget

Here, you should specify the average hourly rate for budgeted staff expenses. Staff expenses refer to salaries, including social security contributions. Other costs that require explanation can also be entered here. This is a free-text field that can contain a maximum of 4,000 characters, including spaces.

A justification for the budget is also requested for each project party. Here, you should specify the average hourly rate for budgeted staff expenses. Staff expenses refer to salaries, including social security contributions.

Prisma automatically calculates the aid intensity and co-funding level for each project party and for the project as a whole. The calculated aid intensity is preliminary and can be adjusted prior to Formas' award decision.

The total cost for each project party, as well as for the project as a whole, must be the same as the total funding.

- **Classifications**
Select the project's subject area and add a sub-heading.
- **Research subject (SCB code)**
Select at least one research subject with two sub-levels that together form the entire code.
- **Sustainable development goals**
Select up to three sustainable development goals (SDGs) for classification purposes, in order of relevance.
- **Keywords**
Select at least one and a maximum of three keywords describing the project. Choose what best represents your project, even if it does not entirely match the field you work in.
- **Appendices: CVs of project participants**
A CV, maximum 2 pages per person, for at least one and maximum of six key individuals. The project manager's CV is mandatory.

9.2.5 Register and sign your application

After the application is completed, it must be registered, submitted and signed by the person responsible for the organisation account. Signing can be done in two ways:

- If the project manager is responsible for the organisation account, then the application is signed automatically after the application is submitted and registered.
- If someone other than the project manager is responsible for the organisation account, then that person must finalise the application. Next, the administrating organisation (the organisation account manager or user whose role is application manager) must register and submit the application. The application is then signed automatically after the application is registered.

The project manager can at any time during the application process go to the tab Verify and register. He or she will see any missing mandatory information or other reasons that might prevent the application from being registered.

For more information, visit the Prisma support page at <https://prismasupport.research.se/user-manual/organisation-account.html>

NOTE: After the application period expires, the application can only be supplemented in special cases on request by Formas.

10 Who can read the application?

According to Swedish law, your application and its appendices are considered as general public documents once they have been submitted to Formas. This means that anyone can request and read your application. Before Formas discloses any applications, it always conducts a confidentiality assessment but can only hide information as legislated for in the Public Access and Secrecy Act (2009:400).

When a grant is awarded, a simpler project description aimed at the general public that does not contain any confidential information will be submitted to Smart Built Environment's programme office. The office will provide a template for this purpose. This project description is used to communicate externally about the project.

Appendix 1: Smart Built Environment in brief

The Smart Built Environment strategic innovation programme supports digitalisation and the opportunities it brings to the built environment sector. It has identified industrialised construction, common information infrastructure, business-driven applications and process integration as fundamental areas of interest. The programme's overarching objective is to foster the continuous flow of information using business-driven applications within BIM (building information modelling), geodata and industrial processes related to construction and including built environment processes.

Smart Built Environment's impact targets for programme partners to achieve by 2030 are:

- 40 percent reduced environmental impact in a lifecycle perspective for new construction and renovation of buildings and infrastructure.
- 33 percent reduction in total time from planning to completion for new construction and renovation.
- 33 percent reduction in total construction costs.
- More new value chains and business models based on lifecycle perspectives, research platforms and new constellations of stakeholders.

The call "Digital built environment in practice" covers all thematic areas of the programme.

Thematic areas

Innovations and new areas of application

Through this call, we aim to stimulate ideas and initiatives that can evolve into innovations and new applications of products, services or processes within the built environment. Within this theme, focus is placed on breaking ingrained patterns and work methods and discovering new solutions. We welcome applications that challenge these patterns and contain disruptive elements. Examples in this thematic area include projects that test previously identified standards in combinations with a view to create continuous digital information flows.

Value chains and business models

Value chains, incentives, and business and operational models are interrelated and must be studied and developed in order to harness the power of digitalisation and industrialised construction. This theme also addresses questions about stakeholder roles, skills, work methods and the organisation of projects and processes. It also relates to questions of public procurement and contract law within the "Information infrastructure" theme. Here, we welcome applications that involve value chains with practical application in the built environment sector and that include stakeholders from the entire value chain. We would like to receive

applications that identify and develop new competencies or new forms of collaboration.

Information infrastructure

This thematic area is about the common information infrastructure that the sector needs for digital and industrial development. It includes standardisation of the exchange and integration of information in smart built processes, including lifecycle information structures as well as issues of data accessibility and data ownership. The thematic area also includes legal issues related to property restructuring, detailed zoning plans and building permits, as well as procurement and contract forms for the optimal use of digitalisation. Continued strategic investments will also be made in this area, and we welcome applications that, for example, involve the testing of developed information infrastructure or the testing of identified standards in a real-world environment.

Knowledge and skills

Harnessing the power of digital transformation in both the private and the public sectors requires a knowledge leap. This thematic area should contribute to raising awareness and building knowledge at private companies and public organisations, both at the management level and in daily operations. It also relates to how we can create and make use of new knowledge. In this area, we welcome applications that involve reviews and syntheses that can provide input for further testing in business operations or contribute to educational efforts. We would like to see skills improvement initiatives in addition to purely educational efforts, such as support for small and medium-sized enterprises to digitalise their businesses.

The programme's impact logic describes the expected impacts in the short and long terms (see Appendix 2).

For more information about Smart Built Environment, visit [the Smart Built Environment website](#).

Current information about the call and a link to the application function are available on [the Formas website](#).

Appendix 2: Smart Built Environment impact logic

Smart Built Environment applies a so-called impact logic. This means that the project activities should help to achieve identified short-term impacts, which in turn help to achieve four overall long-term impact targets. The overall impact targets and each theme's impacts are described below. As set out in Section 7.1, the application should address a theme and describe the relevant impacts that the grant application is expected to help achieve. Note that the same impacts are found in different themes.

Smart Built Environment Impact Logic 2.0

2020-06-25

Activities 2019–2021

INNOVATIONS, NEW AREAS OF APPLICATION

Initiate strategic investments 2019

Calls 2019–2021

VALUE CHAINS, BUSINESS MODELS

Initiate strategic investments 2020

Calls 2019–2021

INFORMATION INFRASTRUCTURE

Initiate strategic investments 2019

Calls 2019–2021

KNOWLEDGE AND SKILLS

Initiate strategic investments 2020

Calls 2019–2021

Results 2021

CROSS-THEMATIC

4 calls completed, address all thematic areas

X projects granted and implemented

X published scientific articles

INNOVATIONS, NEW AREAS OF APPLICATION

Strategy for strategic initiatives developed and initiatives initiated

“Building innovation 2”, method developed and 3-4 calls completed

Projects with disruptive elements

VALUE CHAINS, BUSINESS MODELS

Strategy for strategic initiatives developed and initiatives initiated

Projects that address operators across the value chain – a holistic perspective

Projects that develop new competencies or new forms of collaboration

INFORMATION INFRASTRUCTURE

Strategy for strategic initiatives developed and initiatives initiated

Completed roadmap for Swedish standardisation initiatives

Projects that address testing of standards in a real-world environment

KNOWLEDGE AND SKILLS

Strategy for strategic initiatives developed and initiatives initiated

Three measurements in the measurement project completed

Projects with compilations and syntheses

Established forum/arena for knowledge-building

Blue text: organisation-related results
Black text: theme-related results

Short-term effects 2021

Improved information flow

Increased integration of BIM-GIS used in software

Improved continuous information flow

Data openly accessible for construction, use and maintenance

Object-based information has contractual status

New industry practices and legislation that support digital data sharing

Solutions for liability, ownership & use rights of digital information

Streamlining

Increased productivity in the sector

Reduced resource consumption and process waste

More efficient government processes

Lifecycle perspectives

Digital data, analysis and optimisation, and industrialisation result in less greenhouse gas emissions and lower energy use

CO2 and energy declared in EDPs

Robust environmental and building product declarations available and used in digital format

Knowledge-building and renewal

5 innovations based on open data

Research results are used for validation and risk assessments

Research-based knowledge in the programme areas

Multiple R&D environments established with increased integration between society and the economy

5 new services/products

New entrants in academia and the business community

Increased innovation capacity in the sector

Digital transformation

Integration of digitalisation and industrialisation tested by business sector and authorities in construction projects

Business models based on digitalisation & industrialisation in a life-cycle perspective

Changed work approaches, processes & organisation

Learning organisations

New organisational forms for construction projects, stakeholders and roles

Known economic, technical and skills risks of changing structures

Methods for assessing risks

Short-term effects 2024

Improved information flow

Unified structures for BIM and GIS

Increased open-access data for construction, use and maintenance

Industry practices and legislation support digital data sharing

Clarity around liability, ownership and use rights for digital information

Improved ability to use AI

Streamlining

Increased productivity in the sector

More efficient use of energy and materials

Shorter processing times at the authorities

More efficient decision-making processes at the authorities

A climate change perspective

Reduction of climate impact throughout the life cycle

Climate impact (CO2) is declared in digital environmental product declarations (EPDs) to enable analysis and decision support at different stages of the construction process

Knowledge-building and renewal

New services or products available on the market

R&D environments established for increased interaction among the sector's actors, higher education institutions and research institutes

Increased innovation capacity in the sector

Digital transformation

Construction projects carried out in industrial processes supported by digitalisation

Business models at the actors are based on life-cycle benefits

Changed organisation of work, processes and skills

Learning organisations

Long-term effects 2030

33% shorter time

33% reduction in costs

40% reduction in climate impact

Renewed business logic