



LUNDS
UNIVERSITET

Faculty of Engineering (LTH)
Faculty of Science

Scope proposal, including stages, for the establishment of activities in Science Village

1. Background/introduction

The Vice-Chancellor has tasked the Faculty of Engineering (LTH) and the Faculty of Science (N) (reg. no V 2021/3292) with proposing the activities that are to be established in Science Village (SV) and which activities are to be developed at Sölvegatan/Pålsjö. LTH and the Faculty of Science are also to propose the division into stages for establishment in SV. The respective faculty boards are to approve the proposal. The Science Village Office was assigned by the deans of LTH and the Faculty of Science to draw up a mapping report, which forms the basis of the present memorandum.

Initially, four different proposals were drawn up regarding scenarios for scope and division into stages, and these were presented at a large number of meetings and seminars within the organisation in the period January to March 2022. Dialogues and discussions resulted in the four scenarios being developed and reduced to two, scenarios 5 and 6, which after further embedding through dialogue and discussion were sent out in a consultation paper. The consultation paper was sent out by the SV Office on 17 February in Swedish and English with a response deadline of 12 April. The organisational units that responded to the consultation paper see different pros and cons with the different scenarios. The directly affected organisational units, the Department of Chemistry and Department of Physics, see most advantages in scenario 5, as this provides the opportunity to jointly develop the entire organisation at both the departments. The indirectly affected organisational units, mainly research-oriented groups, see advantages in scenario 6, as scenario 5 can be expected to be too expensive for all organisational units. In terms of activities, an establishment in Science Village leads to all activities in physics and chemistry becoming closer to each other, but at the same time this leads to certain activities that are run at many of the faculties' departments being conducted across the entire campus, at both Sölvegatan/Pålsjö and in Science Village. For life science in particular, in which the Faculty of Medicine is also an important participant, this is a challenge that must be highlighted in the continuing

investigation. The above is described in more detail in the Mapping report¹ and in the consultation round responses that form part of the basis for it.

Lund University has a vision that the establishment of activities in SV is to lead to a renewal of the University. Through the establishment in SV, Lund University creates new, innovative and knowledge-intensive environments. It will reinforce the attractiveness, reputation, quality and societal benefits for the whole University. The construction sector accounts for around 21 per cent of Sweden's total emissions of greenhouse gases. The University has a set target of being a resource-efficient organisation with a minimised impact on the climate and environment². Therefore, the premises planned in SV are to be used effectively, with a high utilisation rate.

LTH and the Faculty of Science have a clear ambition that existing activities are not to be established in the same form in Science Village, but that the establishment is to be utilised for the strategic development of education, research and external engagement as well as support activities at both Sölvegatan and in Science Village. This may entail that specific groups and activities may be added or find better opportunities for development at Sölvegatan/Pålsjö during the various stages of the continuing construction process. While this scope proposal is to provide clear guidance for the next steps in the continuing planning and construction process, there must also be room for changes that are not currently foreseeable, as most of the activities are likely to be different in 15 years' time compared with today.

The University's external monitoring³ predicts for the coming years a period of consolidation, and potentially also a reduction in resources. Renewal will not be accomplished through expansion. The organisational units, tasked by the faculties, should therefore intensify strategic development work. It is important both for Science Village and Sölvegatan/Pålsjö to work on profiling and consolidate and strengthen research and education profiles. It is up to all organisational units to find value-creating synergies in education, research and external engagement in the process leading to an establishment in Science Village and the opportunities that this establishment opens up at Sölvegatan/Pålsjö along the entire Knowledge Highway. A review of support functions is also needed in connection with this. The University's activities are conducted in an increasingly complicated context and efficient and well-integrated support functions are a prerequisite for success. Effective utilisation of support and services avoids unnecessary duplication and ensures that support is at the right level and place to focus on what is best for the activities.

Stage 1 consists of Nanolab Science Village and its associated offices for technical staff, whereas this scope proposal refers to stage 2 and beyond. The aim of the

¹ Mapping report regarding the establishment in Science Village of the Faculty of Science and Faculty of Engineering (LTH) (STYR 2022/229)

² <https://www.lu.se/om-universitetet/vision-mal-och-strategier/hallbarhet>

³ <https://www.lu.se/sites/www.lu.se/files/2022-03/omvarldsbevakning-lu-2022.pdf>

faculty managements is that the entire organisation at LTH and the Faculty of Science shall be developed through the establishment of chemistry and physics activities in Science Village.

1. Risk and impact analysis

The risk areas that the managements of LTH and the Faculty of Science deem most significant with 4 out of 5 in the risk analysis linked to the establishment of activities in Science Village⁴ can be summarised in the following points:

- Risk 1: that **increased rental costs and investment costs** will be **too much** of a burden for the faculties
- Risk 3: that **external factors** have an effect e.g. through unexpectedly high costs
- Risk 6: that the municipality's zoning plan is not compatible with future stricter **rules for the handling of chemicals**
- Risk 7: that **land for expansion** in Science Village for subsequent stages is not available or not reserved
- Risk 14: that **commitment, expertise, ownership and resources** are lacking in the management at faculty and University level.

2. Proposal for scope and stages

Using scenario 5 as a starting point, it is proposed that large parts of physics and chemistry constitute stage 2. The current floor area for the Department of Physics and Department of Chemistry with about 700 staff and around 3,000 students is 40,000 sq. m. It is the faculties' clear aim in the establishment that the area is to be reduced and the continued investigation is to determine the total sq. m and scope in organisational terms. A more limited investigation risks leading to sub-optimisation in the next step. Furthermore, it is essential that a premises programme encompasses the entire organisation at both departments, as even the organisational units developed at Sölvegatan/Pålsjö must plan for changed conditions due to the establishment.

- ❖ Stage 1. Nanolab Science Village including offices for technical staff.
- ❖ Stage 2. A satisfactory joint academic environment for chemistry and physics – education, research and external engagement with support and services.
- ❖ Stage 3. The joint chemistry and physics environment is through this stage brought together at SV. Additional joint environments are established.

⁴ Mapping report regarding the establishment in Science Village of the Faculty of Science and Faculty of Engineering (LTH) (appendix 5 Risk analysis)

4. Starting points for continued investigation

4.1 Education

The aim is for first and second-cycle education in physics and chemistry to be conducted in Science Village and that the University's students regard Science Village as a natural base. Education in physics and chemistry will be established using a joint organisation and co-location in Science Village. Teaching for programmes will to a greater or lesser extent be conducted in Science Village. The exact division will be clarified further on in the planning process. In the coming investigation, when the premises programme is developed, the scope and needs regarding lecture halls, study spaces and other teaching premises in Science Village will be clarified, while it is also important to apply an overall perspective that includes Sölvegatan/Pålsjö. In the forthcoming descriptions of activities, future teaching and needs must be incorporated in the planning.

Some first and second-cycle courses will have teaching components such as laboratory sessions integrated in the research environments in Science Village. Third-cycle studies will be fully integrated in the research environments both in Science Village and Sölvegatan/Pålsjö. New and appropriate teaching premises are to be created that support intertwining with research and innovation, as well as study environments and study spaces that are attractive for all students at Lund University, i.e. not necessarily linked to a specific programme. The premises and environment are to support strong student influence and active student life.

4.2 Research

The research that is planned to be established in Science Village is primarily associated with today's Department of Chemistry and Department of Physics. New and appropriate premises will be created that promote collaboration internally and externally, intertwining with education and strong interdisciplinarity. In the forthcoming descriptions of activities, the requirements of research in the future must be incorporated in the planning. Henceforth, the work includes finding joint clusters/research environments/centres/profile areas in which activities from other departments/faculties/disciplines can be advantageously included.

The faculties have already initiated a joint project on profiling and prioritisation, which will form the basis for creating tomorrow's research environments. Two new profile areas jointly created by the faculties can be mentioned here: Nanoscience and Semiconductor Technology, which includes NanoLund, and Photon Science and Technology, which is linked to the Lund Laser Centre (LLC). Together, these profile areas constitute the core of Lund University's new profile area Light and Materials. The Faculty of Science has initiated a review regarding consolidation of climate and environmental research at Sölvegatan/Pålsjö. These activities are an important part of Lund University's profile area ClimBioSis. It is difficult to overemphasise the important role computational science will have in the development of both faculties' education and research. In this area there are strong activities at both the faculties and also a profile area for Lund University, Natural and Artificial Cognition. In life science there are ambitions to create an Integrative

Structural Biology Centre (ISBC) using the Lund Protein Production Platform (LP3) as infrastructure, and a centre for food research with the working title Northern Lights on Food (NLF). Overall, there is extensive development of activities at both the faculties and there is a clear need for changes regarding premises in both Science Village and at Sölvegatan/Pålsjö.

LINXS

LINXS, an institute within Lund University, has a task to support research and education linked to MAX IV and ESS, and to attract world-leading researchers and create international networks. Science Village is a natural location for LINXS and the intention is to establish activities before stage 2 in premises built by other organisations at Space or The Loop.

LUNARC

LUNARC – Lund University Numeric Intensive Computation Application Research Centre – provides resources and expertise in the areas of high-performance computation, storage and visualisation for researchers at Lund and other universities in Sweden. LUNARC carries out development projects with research teams throughout the University. Premises for LUNARC's staff can advantageously be included in stage 2 in order to create appropriate premises and provide proximity to the research activities conducted in Science Village.

4.3 Infrastructure

It is important to plan for the placement of large research infrastructures in this phase, as such organisational units may have specific needs and requirements in the forthcoming premises programme. It is important early in the planning stage to find synergies and facilitate greater joint use regarding both internal use within Lund University as well as national utilisation. There must also be receptiveness in the planning for future needs and new research infrastructure. It is essential that the special requirements for premises regarding infrastructures are included from the start in the procurement process for a landlord, so that those infrastructures established in Science Village can be given optimal conditions.

Nanolab Science Village and associated offices for technical staff constitute stage 1 of the establishment. Please note that activities involving researchers from physics and chemistry that utilise Nanolab Science Village are not included in stage 1. Premises for these will be included in stage 2.

In the forthcoming investigation, the faculties need to take a position on which of the large existing infrastructures should be established in Science Village in stage 2.

In the planning, infrastructures established in Science Village should as far as possible be synchronised with when the users can move in. The planning should also take into account the minimisation of stoppages and disruptions for other users of the infrastructures. Infrastructures that act as entry environments to MAX IV and ESS should be highlighted and made accessible. Future work should include

the identification of the need for new infrastructures in Science Village, and the associated funding.

4.4 Support/services

At present, the Department of Physics and Department of Chemistry are located at two different sites along Sölvegatan with two different organisations, separate administrative support and different libraries. The aim is to have as much joint and appropriate support as possible. Exactly which support functions and services could be operated jointly in Science Village is to be investigated in an early phase in order to maximise the synergies of the establishment. At the same time, the faculties' joint functions that will have to be in proximity to the core activities in Science Village are to be highlighted, including mechanical and electronic workshops. Unnecessary duplication is to be avoided and the needs of the organisational units are to be the focal point.

This is an opportunity for the two faculties to examine and harmonise processes and support for education and research, which should be done in the next step of the investigation and planning process.

5. Development of Sölvegatan/Pålsjö

When large parts of the organisation related to physics, chemistry and nanoelectronics move to Brunnshög, there will also be considerable opportunities at the campus areas around Sölvegatan/Pålsjö to create new co-establishments of organisational units that are currently split up. An extensive process with the involvement of all organisational units at LTH and the Faculty of Science is needed to develop a joint vision and plan. To provide the basis for these efforts, the faculties have already started work on identifying areas of strength and potential.

The organisational units within chemistry that are not included in the premises programme for stage 2 are the Department of Chemical Engineering, Department of Food Technology, Engineering and Nutrition, and Department of Immunotechnology. The planning of stage 2 thus entails that part of first and second-cycle chemistry will stay at Sölvegatan/Pålsjö, for planned later establishment in stage 3.

6. Costs and financing

The average rental cost per sq. m for LTH and the Faculty of Science in 2022 amounted to just under SEK 2,000/sq. m or a total of SEK 382 million, also including Nanolab. Depending on the scope of the establishment in Science Village, it is calculated that the average cost per sq. m for both faculties, including Nanolab, will rise by between 30% and 37%, excluding rent subsidies from the Vice-Chancellor. The basis for the calculations has been that the organisational units which move from Fysicum and Kemicentrum will retain the same floor area as today, whereas Nanolab will increase its floor area in accordance with the project's calculations.

Calculated according to the organisational units' current floor area, the proposed establishment entails increased premises costs for LTH (including Nanolab) from 14.7% to 19.3% (excluding Nanolab 16.9%) of total turnover. At present, the rent increase for Nanolab is calculated at about SEK 50 million. The Faculty of Science, like the Vice-Chancellor, will finance part of Nanolab's increased rental costs but this is done via grants, which is why the premises cost increase is only presented for LTH according to the above.

For the Faculty of Science, the proposed establishment would increase the percentage of premises costs from 13.9% to 17.2% (excluding Nanolab).

The clear aim of the faculties is that the current floor area of 40,000 sq. m is to be reduced and the continued investigation is to determine the total sq. m. In order to finance an establishment of activities in Science Village, the faculties will carry out thorough calculations in the forthcoming investigation. For more information regarding premises costs and financing⁵ see the memorandum PM – Premises and financing.

Appendix: Mapping report regarding the establishment in Science Village of the Faculty of Science and Faculty of Engineering

⁵ Mapping report regarding the establishment in Science Village of the Faculty of Science and Faculty of Engineering (Appendix 6)