UNIVERSITETET I BERGEN
Det matematisk-naturvitenskapelige fakultet

Arkivkode:

Sak: **B**

Saksnr.: 2022/2788

Møte: 7. april 2022

Orienteringssak - Nygårdshøyden sør



***Realfagskraft** på en moderne campus*
***Innovasjonsknutepunkt** som kobler samfunn, næringsliv, studenter og forskningsmiljøer*

Bakgrunn
Sak 10/21 – Nygårdshøyden Sør - visjon
O-sak C november 2021 – Nygårdshøyden Sør – pågående brukerprosess
Sak 49/21 – Nygårdshøyden Sør – vedtak om flytting av Institutt for informatikk
Sak 3/22 – Nygårdshøyden Sør

Det er høy aktivitet i arealutviklingsprosjektet Nygårdshøyden sør, og fakultetsledelsen ønsker med dette å orientere om status for de ulike aktivitetene i prosjektet.

Arbeid med Konseptvalgutredning (KVU)

Rom- og funksjonsprogram
Rom- og funksjonsprogrammet som ble ferdigstilt i februar 2022 er et av kapitlene i Konseptvalgutredningen for 2022. De øvrige kapitlene (A – Orientering, B-Rammebetingelser, D- Tekniske programkrav) er under utarbeidelse.

Forskningsinfrastruktur
Prosjektet er nå i fasen hvor gjennomføring og innplassering skal planlegges og besluttes. En viktig faktor i dette arbeidet er kartlegging av konkret forskningsinfrastruktur og kostnader som må inngå i prosjektet slik det beskrives i KVU-en. Kartleggingen er et omfattende

arbeid, det gjøres av forskningsgruppene som har detaljkunnskap om instrumentering og aktiviteter. Målet er å best mulig kunne estimere de totale kostnadene i planlagt rehabiliteringsprosess, og dette inkluderer også konsekvenser av nedetid og tiltak for å minimere denne. Arbeidet koordineres av arbeidsgruppen for forskningsinfrastruktur.

Forskningsgruppene er bedt om å bidra med følgende informasjon:

- Opplisting av utstyrsenheter (verdi over 200')
    - Anskaffelsesår - forventet utdatert i år
    - Estimat nyanskaffelse i 2022-priser (eksisterende utstyr, eventuelt tidsriktig utstyr)
    - Flyttbarhet og forventede flyttekostnader
    - Forventet nedetid (nedtak, oppkobling og kalibrering mv)
        - Risiko for prosjektdrift (inkl. master og ph.d.)
        - Forventet inntektstap grunnet nedetid, om mulig
- Kan kritiske tjenester kjøpes eksternt eventuelt flyttes til eksterne lokaler - til hvilken merkostnad?
- Behov for særskilt infrastruktur i rommene, blant annet knyttet til IT

Forskningsgruppene jobber med kort tidsfrist, denne er satt til 30. mars 2022. Innkommet materiale vil deretter bli gjennomgått og oppsummert av arbeidsgruppen, og videreformidlet til gjennomføringsgruppene.

Styringsgruppen vil behandle forskningsinfrastruktur som egen sak i sitt møte 27. april 2022.

Gjennomføring og innplassering
For å kunne fullføre skisseprosjektene må det legges ned et grundig arbeid for å vurdere hvilke innplasseringsløsninger som er hensiktsmessige og gjennomførbare, og i minst mulig grad får negative konsekvenser for studentene og for all pågående forskning.

Det er etablert tre arbeidsgrupper som i samarbeid med Eiendomsavdelingen, arkitekter og tekniske rådgivere arbeider frem gode løsningsforslag for gjennomføring og rokader. To grupper har ansvar for henholdsvis Realfagbygget og Fysikkbygget, og en gruppe ser på problemstillinger knyttet til magasinene i Realfagbygget. Gruppene vil gi sine anbefalinger til strategisk utviklingsgruppe medio april 2022, men vil også bidra underveis i prosessen med utarbeidelse av skisser.

Strategisk utviklingsgruppe vil i sitt møte 19. april 2022 diskutere ulike forslag innplassering i alle bygg. Deres innplasseringsanbefaling vil omfatte hvor de enkelte institutter og enheter bør lokaliseres, men også arealfordeling mellom byggene til undervisningsarealer, innovasjonsarealer, sentre, fellesfunksjoner og verksted. Deres forslag vil bli behandlet i sentral brukergruppe 22.april 2022.

Styringsgruppen vil behandle forslag til innplassering og gjennomføring i sitt møte 27. april 2022.

Skisseprosjekt
Når forslagene til innplassering og gjennomføring er på plass, vil arkitektene i Rambøll arbeide videre med fullføring av skisseprosjekter for de ulike byggene, og i den forbindelse skal også det tidligere skisseprosjektet for Fysikkbygget oppdateres.

Ferdigstilling av KVU
Arbeidet med skisseprosjektene vil foregå i perioden mai til oktober i år, parallelt med ferdigstilling av de øvrige analysene som skal følge med en konseptvalgutredning. Det arbeides for tiden med å få på plass en formell bestilling fra KD.

Arbeid med Konseptvalgnotat (KVN) for Allégaten 64
Kunnskapsdepartementet har bedt om at det utarbeides et eget Konseptvalgnotat (KVN) for Allégaten 64. Dokumentet skal danne grunnlag for beslutning i departementet.

Eiendomsavdelingen har gitt oppdraget til Sweco, som nå er i gang med sitt arbeid. Strategisk utviklingsgruppe er referansegruppe for dem. Konseptvalgnotatet skal ferdigstilles innen juni, og skal ha følgende innhold:

1. Behovsanalyse
2. Samfunns- og effektmål og kravdokument
3. Mulighetsstudie
4. Alternativanalyse

De to første kapitlene er nå nær ferdigstilling, og har vært diskutert med fakultetsledelse og referansegruppen. Sweco er i gang med mulighetsstudien og alternativanalyse, som vil bli presentert for referansegruppen i deres møte 31. mai 2022. Sentral brukergruppe vil også bli orientert om arbeidet, blant annet i deres møte 22. april. Frist for ferdigstilling av dokumentet er satt til 24. juni, og styringsgruppen vil deretter gi endelig godkjenning for oversendelse til Kunnskapsdepartementet.

Kommunikasjonsarbeid
Det er satt følgende mål for kommunikasjonsarbeidet:

1. *Sikre finansiering og realisering.*
   - *1.1. Sørge for at prosjektet blir finansiert i dialog med departement og Storting med åpning for private aktører.*
2. *Visjonen om universitetet uten vegger forankres i viktige målgrupper.*
3. *Bidra til at Allégaten 64 får tilstrekkelig og riktige leietakere.*
4. *God informasjon til berørte i en bygge- og rehabiliteringsperiode på 10-15 år.*
   - *4.1. Sørge for at organisasjonen blir informert løpende om sentrale forhold i prosjektet, at informasjon kommer frem til mottakere og at tilbakemeldinger kommer tilbake til prosjektledelse.*

Det er nå tatt initiativ til en mulighetsstudie for hvordan vi kan bruke utearealene i søndre del av Nygårdshøyden til profilering av prosjektet og våre faglige aktiviteter ovenfor byen. Skisse til prosjekt er utarbeidet, og dette vil bli iverksatt når nødvendige budsjettavklaringer er på plass.

Kommunikasjonsgruppen har fått utarbeidet bygg-illustrasjoner til informasjonsarbeid og har laget maler for presentasjoner. Nettsiden for prosjektet er under oppbygging, og vil også komme i kortfattet engelsk versjon. Oppdatert visjon er nå oversatt til engelsk, se vedlegg.

Det planlegges å tilby allmøter til instituttene inntil to ganger pr. semester, hvor fakultetsledelsen kan komme for å presentere eller instituttledelsen selv formidler informasjon fra prosjektet. Det planlegges også å utarbeide informasjonsmateriell særlig rettet mot studentene. Kommunikasjonsarbeidet i prosjektet vil intensiveres etter hvert som planene blir mer konkretiserte og dermed lettere å formidle.

30.03.2022/Kristine Breivik

Gunn Mangerud
Dekan

Vedlegg: Oppdatert visjonsnotat av januar 2022 – engelsk versjon

Nygårdshøyden South – a science power

The University of Bergen (UiB) contributes to sustainable societal development by providing outstanding research, forward-looking education and dynamic knowledge transfer. Our researchers and students are jointly involved with businesses and public figures in creating new insights and sustainable solutions for the future. The Faculty of Mathematics and Natural Sciences has the academic breadth, expertise and access to advanced infrastructure required in order to meet the major challenges of our time such as climate change and biodiversity, predictable access to energy, the responsible use of resources and access to food, water and good health.

Nygårdshøyden South represents the realisation of the UiB's vision, i.e. *knowledge that shapes society*. Under this major initiative the UiB and the outside world are uniting in order to encourage each other, conduct research, learn, discuss and shape future solutions. With Nygårdshøyden South, the UiB is opening up and inviting you to enter; w*e are a university without walls*.

The main aspects of our vision:

- **Science power** on a modern campus.
- **Innovation hub** that connects society, businesses, students and research communities.

Science power on a modern campus

Exciting hypotheses and modern research infrastructure are prerequisites for realising ambitious scientific research, innovation, education and top quality international knowledge transfer. Students and researchers ask relevant academic questions, conduct experiments, use advanced scientific equipment, develop technology and new solutions and create stimulating and forward-looking academic environments. Proximity to innovative circles and access to experimental and digital tools facilitates learning methods where students are both challenged and challenge scientific theories and socially relevant knowledge. In this way researchers and students will combine academic and interdisciplinary expertise in a culture of innovation. Nygårdshøyden South offers modern, well-equipped research and learning arenas where the socially shaping power of science subjects is defined through active participation, discussion, academic specialisation and the joy of creating things on a modern science campus.

Innovation hub

Artificial intelligence, information technology, data and computational science all change and strengthen science subjects and raise the level of ambition for both basic insight and practical applications. We employ this interdisciplinary expertise at the UiB in order to facilitate innovation in respect of education and research and for business and technology-oriented innovation in close cooperation with external partners. In a dedicated new building, the UiB will create an innovation hub for society, businesses, students and research communities. In this hub start-ups and knowledge companies will interact closely with leading academic computer science communities and students in stimulating learning environments.

Nygårdshøyden South is realising our ambitions for interdisciplinary research, future-oriented education and relevant innovation. The Faculty of Mathematics and Natural Sciences at the University of Bergen is taking responsibility for innovation and regional business development by creating new solutions and contributing to strong competence and technology environments in Western Norway. Together we are contributing towards sustainable national and international social development in the region.

Vision for the Nygårdshøyden South campus project
The world is changing and accelerating rapidly. The UN Sustainable Development Goals sum up many of our important challenges. In a relatively few years' time, we will need to address how we can steer developments towards a world which is good for people to live in; a global society that is ecologically and economically sustainable and is also sustainable in respect of resources and distribution policy. All disciplines at the *University of* Bergen must contribute by:

- Researching innovative, relevant and quality assured knowledge that provides new insight.
- Educating skilled and socially-oriented academics who can contribute important innovation, long-term solutions and knowledge-based input to the public debate.
- Being an innovative university that moves knowledge fronts and crosses academic boundaries on the road to new recognitions for the benefit of nature, the environment and society.

The Faculty of Mathematics and Natural Sciences at the UiB has a special responsibility to meet societal challenges by providing relevant research and education based on mathematics, informatics, natural science disciplines and technology. These are essential disciplines for describing, analysing and understanding the causal relationships related to many of the challenges being presented as we head towards a sustainable society. Equally important is the fact that these disciplines create the knowledge base needed for developing solutions and measures, as well as insight and a data basis for good management.

Strong research environments with modern infrastructures enhance the power of science
High quality ethical and scientific research lie behind the Faculty's development and delivery of all aspects of its social mission. The Faculty has clear ambitions relating to conducting outstanding research in an international context in respect of all its disciplines. We are particularly good in respect of marine operations, the climate, energy and energy transition. In addition to our thematic initiatives, the Faculty's strategy places great emphasis on having strong disciplines. This serves as the basis for developing high academic standards and for paving the way for being able to address new, actualised issues. Our high quality research is reflected in our success in national and international competitions for research funding and has resulted in a number of prestigious awards and strong interdisciplinary centres, including centres for outstanding research and research-based innovation. Apart from our excellent academic disciplines, our challenge ahead lies in creating more opportunities for interdisciplinarity, innovation and the integration of digital technologies.

In several of our disciplines, well-equipped laboratories with high HSE standards and modern advanced scientific instrumentation are essential for maintaining and developing outstanding academic environments. Good access to such research tools is a prerequisite for contributing to the knowledge front, while state-of-the-art infrastructure is an important competitive advantage for recruiting skilled researchers and students and for being successful in competitive arenas. The Faculty's goal is to have modern experimental environments that are run with top technical and research ethics expertise and in accordance with recognised standards for sustainability, health, safety and the environment. This requires campus developments that will ensure flexible, eminently suitable areas for a wide range of basic and advanced scientific tools which can be developed and adapted in line with our academic communities and society's need for first-rate international research, education and innovation.

Science expertise and instrumentation are also essential for the conservation and analysis of many of the University Museum's collections. These collections are an important research infrastructure for the University Museum and the UiB. Co-location in Nygårdshøyden South, joint laboratories for relevant disciplines and making the Museum's collections available to the Faculty's researchers and students, all contribute towards strengthening the UiB's science expertise. The collections document

the diversity of global species and our natural and cultural heritage; they serve as a knowledge bank for research related to the UN Sustainable Development Goals. The location of two of the University Museum's departments at Nygårdshøyden South also facilitates good interactions with and the development of presenting scientific research to a wide audience.

While natural sciences discover and explore the basic laws of nature and the complex connections arising from these, technology is basically system building designed to meet human needs. Technology development requires a causal understanding of nature that basic scientific research creates through field and expedition-based observations of natural systems, laboratory experiments, mathematical modelling, calculations, simulations and algorithmic data analysis. Similarly, technological developments in respect of scientific instrumentation are a very important driver of knowledge development in the natural sciences.

A major feature in the development of modern natural sciences is the collection of very large amounts of data ("big data"). How we store and make data available has become an essential part of research and forms the basis of new ways of collaborating, by sharing date with both research communities and businesses. A related path is the development of very powerful algorithms and techniques for extracting information and correlations in very large data sets. Many of these algorithms fall under the concept of machine learning, which in turn are examples of approaches to artificial intelligence. The establishment of the Centre for Data Science (CEDAS), as well as the Faculty's initiative to establish a national consortium designed to strengthen Norwegian research and education in respect of artificial intelligence, machine learning and robotics, are important measures for taking leadership in this development. Machine learning and artificial intelligence are becoming key research tools in all our fields and thus also in the process of transforming the subjects themselves. The Faculty aims to be at the forefront in adopting digital technologies across our disciplines and regards this as being important for strengthening Bergen as one of Norway's principal natural science and technology environments.

Somewhat paradoxically, the rapid progress made in respect of digital technology and computational modelling creates an *increased* need for experimental exploration and follow-up. This is partly because we are able to use increasingly larger amounts of data, but also because experiments are always crucial for calibrating and developing models and for exploring whatever lies outside the validity range of the models. Close links between experimental research and data and computational science enable us to explore large complex issues.

The digital revolution is taking place to the same extent in the rest of society and has extensively changed the way we work, live, communicate and interact. However, this is only a start and basic research and education in ICT-related subjects are crucial in order for the digital transformation of society to be successful. This will also strengthen the University's other ICT-related research and education and applied subject areas such as medical artificial intelligence, financial technology and media technology. With the increasing pace of development in technology and digitalisation, the Faculty's strong educational and research environment in respect of science and technology has a special role and responsibility as a regional business partner.

Learning arenas that inspire, activate and challenge

Our programmes combine research-based knowledge with scientific methods where theory is explored and challenged with experiments and observations from the laboratory and the field. Students actively participate in the research *process and* learn to use modern scientific equipment and analytical tools. Our programmes are supported in the disciplines, while our students are challenged with interdisciplinary perspectives and trained in generic skills and entrepreneurship. Programming, visualisation and data analysis are important in all our study programmes.

Our learning arenas shall encourage student activity and the use of research-based teaching methods. Our programmes shall channel students' curiosity, energy and motivation into long-term socially beneficial commitment. The Faculty has two *Centres of Excellence* which develop teaching practices and innovative methods for student active learning.

Our campus shall serve as a hub where students meet each other, researchers, tutors and committed business professionals. Placing greater focus on continuing education (EVU) will facilitate lifelong learning and invite the outside world into our premises in order to gain knowledge updates and new insights. Our campuses shall have an abundance of places that invite exploration and cooperation on large and small academic, current, interdisciplinary and global challenges. Consequently the whole campus will be a learning arena.

Innovation hub – greenhouses for good ideas

Research, education and investing in technology and innovation shall enable the Faculty to contribute knowledge that facilitates renewable, smart and safe solutions, as well as basic knowledge and new insights. **We shall create good growth conditions for good ideas.** With our strong national and international research partners and a forward-looking society and business community, we are creating a local ecosystem for innovation and entrepreneurship.

In order to achieve the Faculty's objectives, knowledge must be put together in new ways. Interdisciplinarity, innovation and alternative ways of working and collaborating are fundamental to success. It will be our job to provide more space for interdisciplinary perspectives, establish closer contact with society and businesses, and connect innovation with entrepreneurship and practical skills.

One important aspect of this involves bringing people together. In order to face the future and succeed with top quality international research and education, we need to develop our physical environment around collaborative arenas and meeting places. Collaboration between universities and the business sector takes place in many different ways, through networks, partnerships and more personal relationships. In order to be even more successful with interactive learning and innovation, proximity is essential because it strengthens communication across disciplines, creates good relations between organisations and the academic community and helps to create trust and a common culture.

Proximity facilitates exchanges between students and Faculty researchers and partners, where ideas and knowledge can go both ways and enable new forms of innovation. In order to achieve this the Faculty will work on establishing an **innovation** and **entrepreneurship** structure and culture for both its students and its employees. Student-driven innovation will be facilitated with access to strong academic environments, workshops, makerspace, start-ups and other partners.

The University's science research and education has an advantage because it is located in a concentrated area at Nygårdshøyden South, which includes the inner parts of Marineholmen. Allégaten ensures a sense of belonging and connection with the rest of the university campus, the University Museum and the Student Centre. Business clusters, innovation arenas, businesses, relevant authorities and strong partners such as NORCE are located in the immediate vicinity. The "diagonal" on the way down towards the Bergen Light Rail further connects us to communities and partners such as HVL and business and industry partners, as well as the Health Cluster and Haukeland. Nygårdshøyden South will be part of a cohesive urban environment and provide a unique opportunity for enhanced work on knowledge transfer and communication, not only in respect of

continuing education, but also to invite schools, "most people" and create new meeting places for knowledge transfer.

Campus development is key to realising our vision
Realisation of our vision for Nygårdshøyden Sør requires comprehensive and pervasive campus development that over the next decade will enable the Faculty to emerge as a science power and innovation hub. A modern new building will be linked to cultural historical and architectural values in the form of Geophysics and modernised Physics and Science buildings with a new **energy efficient** and **green profile**. We will be an open university with an inviting campus area.

Our science power is being created in top quality modern laboratories and areas designed for a broad range of basic and advanced experimental research. Open learning areas and spaces for interaction and concentration will be key facilities, where flexible solutions can change area usage as required. We will facilitate student-driven arenas for innovation. These will play an important role in developing culture around innovation and will create ownership and encourage curiosity and creativity.

Modernisation of the Science Building and the Physics Building is a prerequisite for realising the university's ambitions for top international experimental science research. The Science Building will be developed with modern areas for intensive laboratory activity and host advanced and sensitive scientific instrumentation. In addition to experimental and theoretical activities, the Physics Building will function as a technology centre with dedicated workshops. In context, this provides open and appropriate areas where students, researchers, engineers and partners can challenge established knowledge, create new insights and develop innovative solutions to the challenges of our time.

It is imperative that our academic communities have facilities where we can conduct state-of-the-art research in the future and at the same time safeguard HSE in our current regulations. As a campus development, the project fully demonstrates both the value and potential of reuse. Its architectural exterior is being preserved while simultaneously making use of the infrastructure standards that facilitate laboratory activities. **Coherent, modern buildings are enabling the Faculty to realise its research visions and contribute knowledge to sustainable solutions.**

One of the new buildings will be an Innovation hub that connects society, businesses, students and research communities.

At the intersection between our marine, climate and energy restructuring clusters, a new building will be erected centrally in the Faculty area, in Allégaten 64. This building will serve as a hub for conducting research on computer science and for the integration of ICT across science subjects. The new building will have modern and future-oriented learning arenas that promote interaction, testing and creative enjoyment. It will facilitate an inclusive, stimulating environment where researchers and students can meet businesses and society. It will be a gravitational point for clusters in the area and constitute an innovation hub for the sciences.

In order to facilitate successful energy transition, sustainable technology and social development, we will bring together key parts of the knowledge cluster within the green shift and facilitate co-location with relevant local partners. Areas for start-ups and makerspace will be key elements in an ecosystem for innovation and entrepreneurship. Rental areas will attract incubators and technology transfer companies and common areas will serve as meeting points and aid interaction. **The building is a prerequisite for realising the University's ambitions for increased cooperation with the outside world, new teaching methods and greater innovation power for science subjects.**

An open, vibrant campus – a university without walls
The university has an important role to play in ensuring that society is built on knowledge and expertise; a role that requires strong, close interaction with the outside world - globally, nationally and locally. The Faculty shall be perceived as being open and accessible to students, researchers, partners and the city's general population. We will ensure that our campus is vibrant throughout the day. We want an open, welcoming campus with suitable buildings and great outdoor spaces. Cafes, meeting places and open spaces will invite the outside world in.

Open outdoor areas and bridges between buildings connect the various parts of the enterprise and connect our campus with the local community and Nygårdsparken. Our buildings will provide modern, innovative learning areas, advanced laboratories, research infrastructure, good workplaces and flexible collaborative arenas that are required for high quality research, learning and innovation. **Our campus project will enhance our science power and our innovation hub at Nygårdshøyden South.**