

## Aarhus School of Architecture // Design School Kolding // Royal Danish Academy

### A Vision for KADK:LAB

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# ***A Vision for KADK:LAB***

report, 2018

Strategic Development Project KADK: LAB  
Recommendations from the working group



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## 1. Summary of Report

The **purpose** of KADK:LAB is to establish a **common identity** across existing workshops/labs and ensure they represent the **state-of-the-art** in expertise and facilities, with a particular focus on **high-technology**.

The ambition of KADK:LAB is to generate **value** within the immediate KADK community (across the three schools) and with external partners.

KADK:LAB will generate value by:

- strengthening the **academic relevance** of making and materially focused analytical practices
- sharpening the idea that workshops and labs are spaces of critical reflection supporting **‘thinking through doing’**
- spurring **innovation and knowledge creation** within workshop and lab based practices
- **critically responding to emerging trends** and cultures within workshop/lab practices, and relevant **policy level agendas**.
- stimulating **synergies** between workshops and lab environments

The value that KADK:LAB generates will be applied to achieving a three-fold vision that targets:

- advancing **Research/KUV and Teaching** activities
- nurturing **innovation** of workshop/lab practices
- building **strategic partnerships** within and beyond KADK

The vision and recommendations presented in this report have been developed through a **consultation and development process** involving:

- Reference to four prior reports
- Interviews with members of the KADK:LAB Working Group
- 6 workshops with the KADK:LAB Working Group
- 3 workshops with staff representatives of each school
- 1 workshop with student representatives from the three schools.
- Visits to relevant external academic and industry facilities
- 1 presentation to the KADK Board
- 1 presentation to the KADK Rectorate and Heads of Schools
- Frequent meetings between the Project Leader (Mathilde Aggebo) and the ‘KADK:LAB writing group’.

The report also presents **recommended strategies** aimed at achieving the ambitions of the vision, and fostering a culture that promotes synergies across disciplines and environments, and that can **critically respond to emerging societal trends and policy agendas**. These strategies are organised by **six key areas**:

1. *Interface with Research/KUV*
2. *Interface with Teaching*
3. *Space*
4. *Organisation*
5. *Identity*
6. *Budget and Funding*

A number of the strategies reiterate recommendations made by previously commissioned reports. These are supplemented with strategies that target unique opportunities afforded by the prospect of KADK:LAB.

In total, the report presents **over 35 strategies**. We highlight eight of the most prominent ones below:

- expansion of physical spaces to include flexible mock-up areas
- key appointments to steer KADK:LAB in line with the vision
- brokering and hosting cross-disciplinary pilot research projects
- managing 'open' access to all facilities through 'elective' courses
- fostering external consultancy to industry/practice
- offering Post-professional short courses in high-technology practices
- continued professional development for workshop/lab staff
- establishing a trans-disciplinary, high-technology focused, Master's level education

The report also demonstrates how multiple strategies can be intersected through tangible **scenarios** that support the aims of the vision.

We present four example scenarios:

1. *'softening boundaries'*
2. *'residency'*
3. *'trans-disciplinary education'*
4. *'extended network'*

## 1. Dansk sammendrag af rapporten

**Formålet** med KADK: LAB er at etablere en **fælles identitet** på tværs af eksisterende værksteder/laboratorier, samt at sikre at disse repræsenterer **state-of-the-art** i forhold til ekspertise og faciliteter med særlig fokus på **højteknologi**.

Ambitionen med KADK:LAB er at skabe mere værdi inden for det nære KADK-fællesskab (på tværs af de tre skoler), samt i relationen med eksterne partnere.

KADK: LAB vil generere værdi ved at:

- Styrke den **akademiske relevans** inden for den håndværksmæssige og materiale fokuserede analytiske praksis.
- Skærpe ideen om at værksteder og laboratorier er miljøer til kritisk refleksion, der understøtter **'thinking through doing'**.
- Anspore til **innovation og vidensproduktion** inden for værksteds- og laboratoriebaseret praksis
- Forholde sig **kritisk og aktivt til nye tendenser** og kulturer inden for værksteds- og laboratoriebaseret praksis, samt relevante **politiske dagsordener**.
- Stimulere **synergien** mellem værksteds- og laboratoriemiljøer

Den værdi, som KADK: LAB genererer, vil blive anvendt til at opnå en tredelt vision, der er målrettet mod at:

- fremme **Forsknings/KUV og undervisnings aktiviteter**
- udvikle **innovation** inden for værksteds/laboratoriepraksis
- opbygge **strategiske partnerskaber** inden for og uden for KADK

Visionen og anbefalingerne i rapporten er udviklet gennem en **hørings- og udviklingsproces**, der har involveret:

- Fire tidligere rapporter
- Interviews med medlemmer af KADK:LAB's arbejdsgruppe
- 6 workshops med KADK:LAB's arbejdsgruppe
- 3 workshops med repræsentanter fra hver skole
- 1 workshop med studenter repræsentanter fra de tre skoler.
- Besøg til relevante eksterne akademiske og industrielle miljøer
- 1 præsentation til KADK's styregruppe
- 1 præsentation til KADK-rektoratet og skolelederne
- Hyppige møder mellem projektlederen (Mathilde Aggebo) og 'KADK: LAB skrivegruppen'.

Rapporten præsenterer også en række **anbefalinger til strategier**, der sigter mod at realisere visionens mål, samt fremme en kultur der søger synergi på tværs af discipliner og miljøer, og som kan reagere aktivt og **kritisk over for nye samfundstendenser og politiske dagsordener**. Disse strategier er organiseret inden for **seks hovedområder**:

1. Grænsefladen mod Research / KUV
2. Grænsefladen mod undervisning
3. Rum
4. Organisation
5. Identitet
6. Budget og finansiering

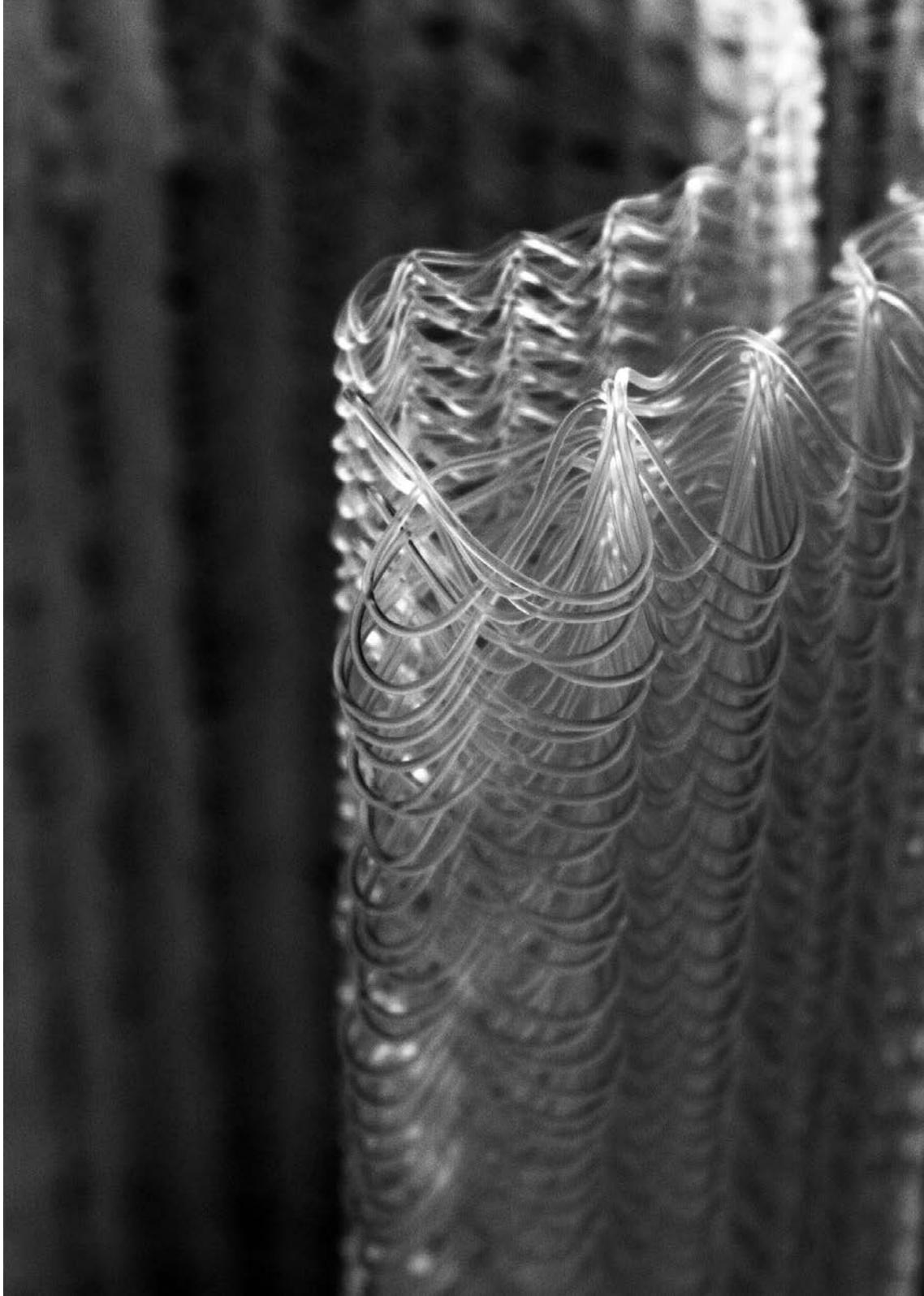
Et antal strategier bygger på og gentager anbefalinger fra tidligere relaterede rapporter. Disse er suppleret med strategier, der retter sig mod unikke muligheder, der er fremkommet i forbindelse med udviklingen af visionen for KADK: LAB.

I alt præsenterer rapporten **mere end 35 strategier**. Nedenfor fremhæver vi otte af de mest fremtrædende:

- udvidelse af fysiske rum, der indeholder fleksible mock-up områder
- nøgle aftaler med det formål at kunne styre udviklingen af KADK:LAB i tråd med visionen
- facilitere og værtskaber for tværfaglige pilot forskningsprojekter
- styring af "åben" adgang til alle faciliteter gennem valgfrie kurser
- Fremme ekstern rådgivning til industri / praksis
- korte faglige efteruddannelseskurser inden for højteknologisk praksis
- løbende faglig udvikling af værksteds- / laboratoriepersonale
- etablering af en tværfaglig kandidatuddannelse med et højteknologisk fokus

Gennem konkrete **scenarier** viser rapporten også, hvordan flere strategier med fordel kan gennemføres på samme tid og understøtte visionens mål. Vi præsenterer fire eksempler på sådanne scenarier:

1. 'Opblødning af grænser'
2. 'Residency'
3. "Tværfaglig uddannelse"
4. 'Udvidet netværk'





NORD

## 2. Introduction

### CONTEXT & MOTIVATION

There is currently a technological development that radically changes our way of using and consuming technology in both our daily and professional life. Within a number of areas, products and services today are considered in new ways. The technological development, including digitalisation, is a crucial driving force for new business areas and the future development of our society. In relation to technological development, we also see for example, the circular economy plays an ever increasing role.

KADK has set a goal that future graduates should have more technology understanding and competencies, and the capabilities to translate this knowledge into concrete solutions. Bachelors' technological skills must be in line with industry, and candidates must be able to lift the level in the industries.

KADK's workshops and laboratories will be developed for a joint high-tech workshop/laboratory that will support the technological competencies in education and be a hub for research and artistic development at KADK. KADK:LAB must be "state of the art" and an attractive meeting platform for KADK and our external partners.

**Making matters.** The activity of making underpins the breadth of disciplines represented by *KADK* across the three schools.

Whether it is the making of artifacts or the making of materially focused experiments; creatively or analytically focused; aimed at producing something pre-designed or exploratory; the synthesis of materials and

material assemblies or their representation - methodologies of making provide critical ways for raising, informing and engaging with questions of design, conservation and architecture.

The expertise and methodologies embodied by lab and workshop environments - through staff and facilities - are an **essential asset** for teaching and advancing the practice-based methods that define, or contribute to, these disciplines.

The *KADK:LAB* project represents a unique opportunity to strengthen the **academic relevance** of making and materially focused analytical practices; to sharpen the idea that workshops and labs are spaces of critical reflection supporting '**thinking through doing**'; to spur **innovation and knowledge creation** within workshop and lab based practices; to **critically respond to emerging trends** and cultures within workshop/lab practices, and relevant **policy level agendas**, to ensure the highest relevance in facilities and expertise for the KADK community.

The impetus for the KADK:LAB project arises from the *Action Plan for a New Focused KADK*. Against a context of 30% dimensioning of architectural and design education, and plans that the School of Conservation will, over time, move to the Holmen campus, the ambition is to assemble KADK's workshop laboratory resources in a joint professional platform.

The aim is to **stimulate synergies between workshops and laboratories**, and to strengthen their relation to research and teaching. KADK:LAB will also act as a platform for **fostering collaboration through strategic networks** with external academic institutions, industry, practice and other professional bodies and communities.

## Terms of reference (Kommissorium)

The following terms of reference, as developed by Mathilde Aggebo and Peter Thule Kristensen as part of the Action Plan, has defined the work for the writing and working group and acted as the base for the development of this report.

### Background of the terms of reference

According to KADK's Action Plan for a New Focused KADK, the student's technological competencies will be lifted, so that the candidates will come to work sooner.

KADK's workshops and laboratories will be developed for a joint high-tech workshop/laboratory that will support the technological competencies in education and be a hub for research and artistic development at KADK. KADK:LAB must be "state of the art" and an attractive meeting platform for KADK and our external partners.

The goal is that graduates from KADK in the future should have more technology understanding and competencies to translate this knowledge into concrete solutions. KADK sets out a new goal that the bachelors' technological skills must be in line with industry, and that the candidates must be able to lift the level in the industries.

There is currently a technological development that radically changes our way of using and consume technology in both our daily and professional life. Within a number of areas products and services today are considered in new ways. The technological development, including digitalisation, is a crucial driving force for new business areas and the future development of our society. In relation to technological development, we also see for example, the circular economy plays an ever increasing role.

### Aims of the the terms of reference

- KADK-LAB supports and contributes to the teaching and ensures that candidates from KADK have great technology understanding and can work creatively with new and old technologies.
- Research on KADK is strengthened through increased focus on how technology can be used and develop architecture, conservation and design.
- Being a platform for KADK's education, research and labor, including to investigate how it is possible to open KADK:LAB for external users.
- To develop a business plan, including a plan for external financing.
- To investigate if IT teaching is to be camped at KADK:LAB and thus become a strong future technological research environment.
- To propose the principles for a coherent organization of KADK's print facilities.

### Indicators that the target of the the terms of reference is met:

- That *KADK:LAB* in 2019 is visible on the website and has received nationwide media coverage.
- That cross-disciplinary education and at least 80% of the programs in 2019 involve *KADK:LAB* in the teaching in 2019.
- That in 2019 there are at least three research projects that have arisen in connection with *KADK:LAB*.
- That in 2019 there will be systematic teaching material (possibly digital) that introduces to *KADK:LAB*'s analogue and digital technologies.
- That *KADK:LAB* in 2023 has an average external funding of min. 1 million kr. per year (research projects, sponsorship, fund appropriations, user payment).
- That *KADK:LAB* in 2019 has at least one collaboration with external users and 2023 at least three collaborators.

### Responsibility and organization of the terms of reference

The overall responsibility is a steering group consisting of the managers of KA, KD and KK. Subject manager for KD is the chairman of the steering committee.

The steering committee decides how KADK:LAB is to be organized, including that there are uniform employment terms for employees. A wide working group across schools is reduced under the steering group with min. a co-worker from each of the new institutes, student representation from respectively. KA, KK and KD as well selected workshop staff. Student representatives are requested through the student secretariat.

The working group is divided into a less operational writing group and a sparring group, compiles a project and phase plan, including precise goals for the different phases. The working group works closely with other working groups, which are set up in continuation of the action plan. In this regard, the faculty leaders initiate joint workshops at KADK level, where the workgroups' work is discussed with each other and together with the study boards, VIP Representatives in the Academic Council and Research Director. The final result is sent in consultation at the institute councils. In addition, the faculty consult with the recruiters. The working group continuously presents its visions, plans and results for the steering committee.

### Deadline

Fully implemented by September 2019. The working group participates in the first joint workshop 19.12 and then prepares a detailed time and phase plan. Workshops and laboratories must be as functional as possible during the process.

### Additional Information

KADK currently has 14 specialized workshops and laboratories, which is a central part of architectural, conservatory and design programs. They support the programs and KADK's research and artistic development. Students and researchers have ongoing access to workshops and laboratories, which should allow for the formulation of experiments, prototypes, scenarios and models with analogue and digital technologies. It is an important (artistic) form of recognition and a central part of the methodology of education.

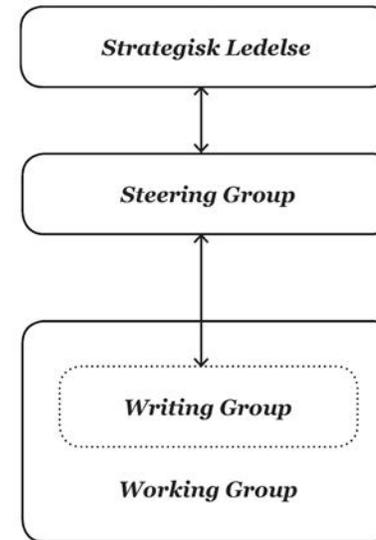
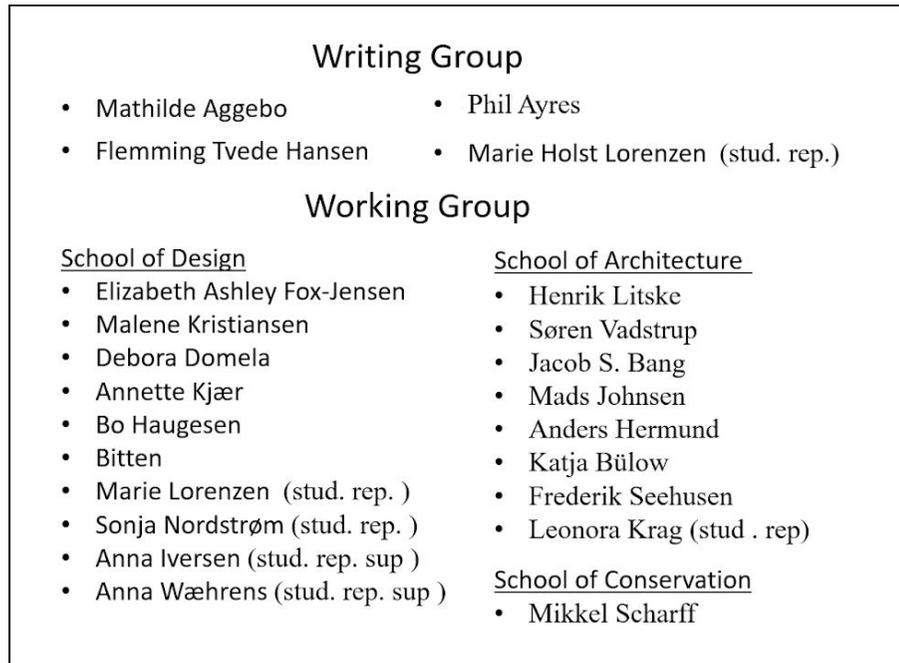
With 30% dimensioning of architectural and design education, and plans that the School of Conservation will, over time, move to the Holmen campus, we wish to assemble KADK's workshop laboratory resources in a joint professional platform. This is done to take advantage of the capacity and synergy possibilities between workshops and laboratories as best as possible,

It also happens to ensure that interdisciplinary technological development in the workplace area is ongoing and that KADK's workshop training in the future will be strongly research-supported.

## WORKING GROUP ORGANISATION & ACTIVITIES

### Structure of working group/writing group & Interfaces to other groups

As recommended in the terms of reference, the 'KADK:LAB Working Group' comprises representatives from the three schools, and includes a cross section of TIP/VIP employees and students.



Over the last year (Jan 2017 - Jan 2018), the *Working Group* has been engaged in assessing current circumstances and needs, identifying and assessing potentials, developing a clear vision for the role of KADK:LAB and devising strategies through which to achieve the vision.

The effort of the *Working Group* has addressed four core areas:

1. Statement of existing conditions (current)
2. Statement of preferred conditions (vision)
3. Proposal of methods to achieve vision (strategy)
4. Communicating and testing proposals (recommendations)

### 1. Current

- Assessment of current facilities (referring to prior reports)
- Assessment of current relations to academic/research/external - various perspectives (institute, programme heads, common courses, teachers, students)
- Summary of stated transformations in education planned in Handlingsplan
- Didactic relations to workshops

### 2. Vision

- Summary and critical evaluation of existing stated visions (Handlingsplan, and prior)
- Define scope of vision - relations (academic/practice/industry/future), infrastructure, space, staffing, economy, new areas of investigation, and testing relevance of existing.
- State-of-the-art/learning from others (assessment of other relevant workshop/lab environments)
- Define vision

### 3. Strategy

- Outline the implementation of the KADK:LAB working group and sub-groups, describe their representation and roles
- Activities and findings of the working group and sub-groups
- Strategic plan addressing:
  1. Strengthening relations (academic activities/practice/industry)
  2. Assessment of spatial organisation
  3. Acquisitions
  4. Staffing

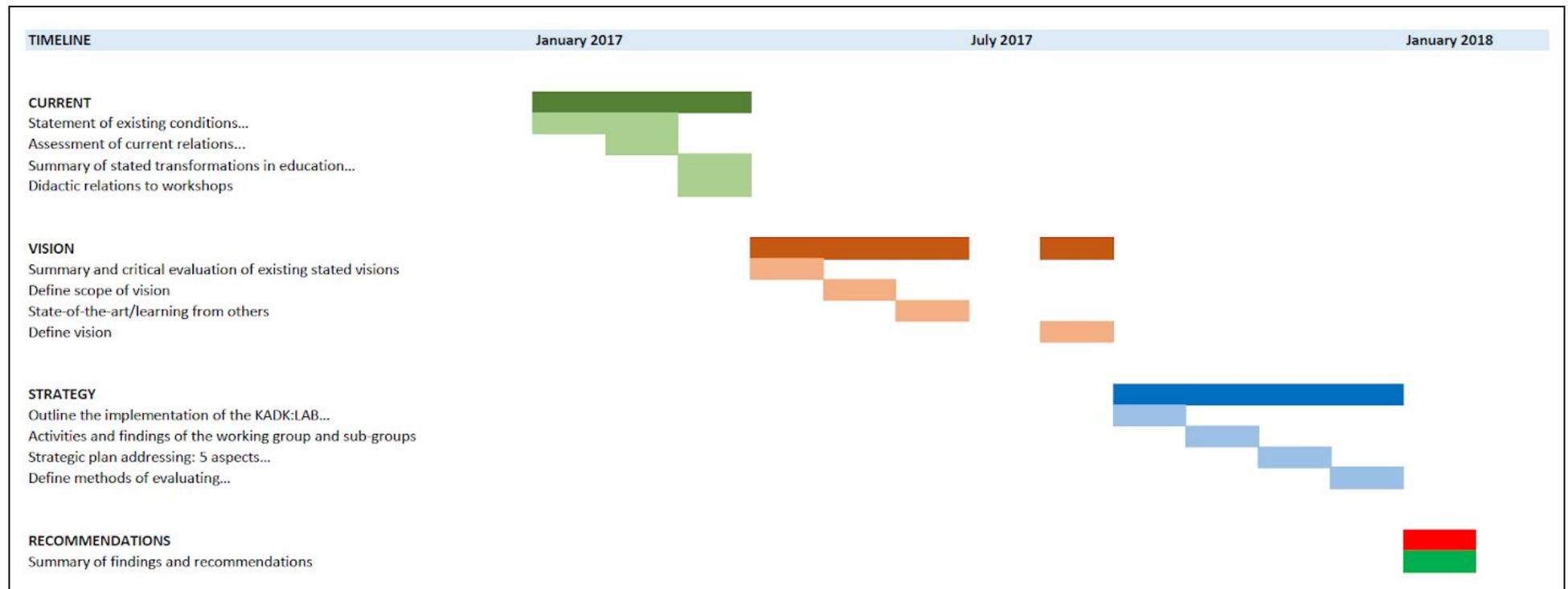
### 5. Economy/funding

- Define methods of evaluating the strategy and define measures of success

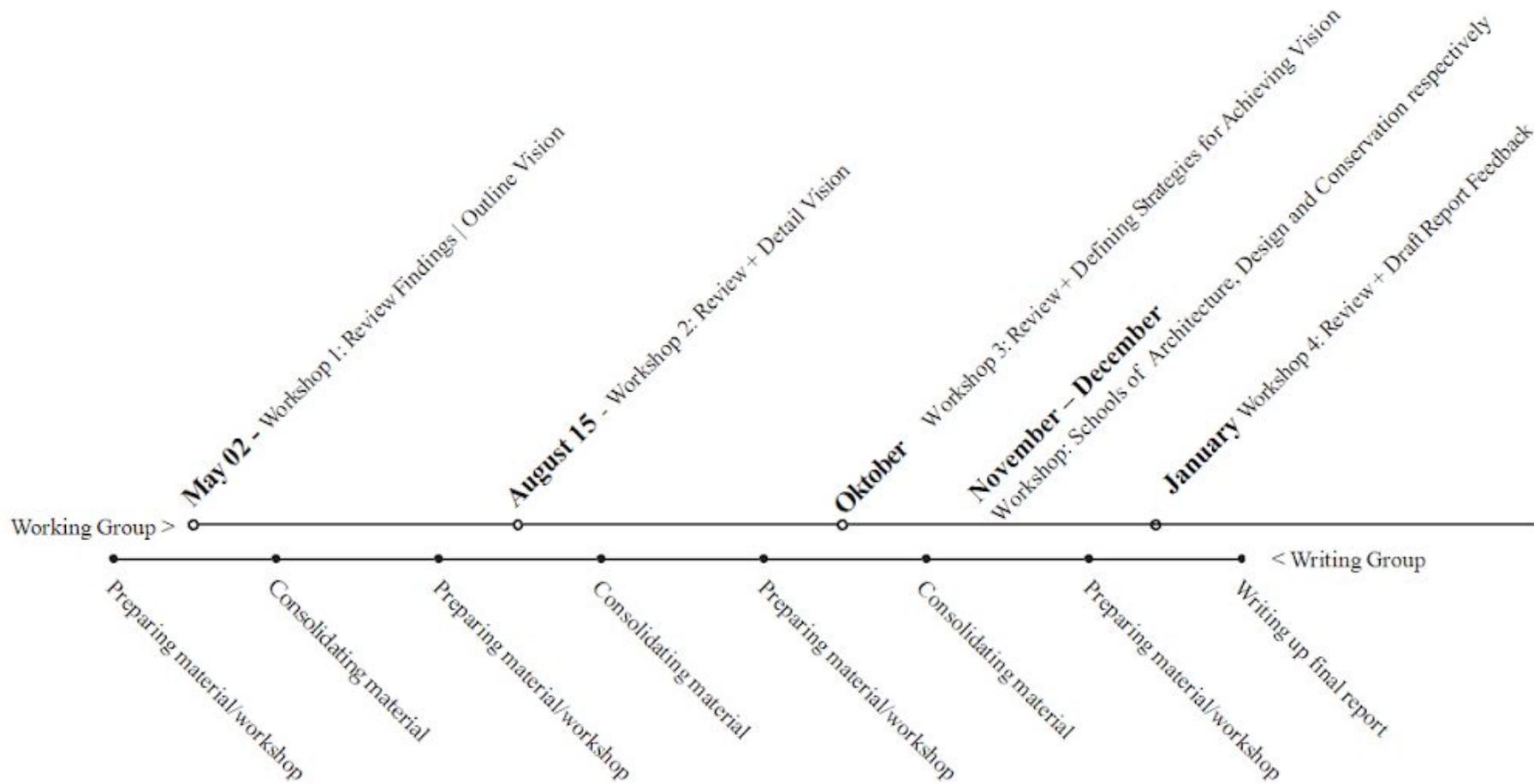
### 4. Recommendations

- Testing of draft recommendations through a consultancy process involving all schools and representatives from all stakeholders.
- Summary of findings and recommendations produced and disseminated as an open report

## Overall Timeline of Working Group Activities:



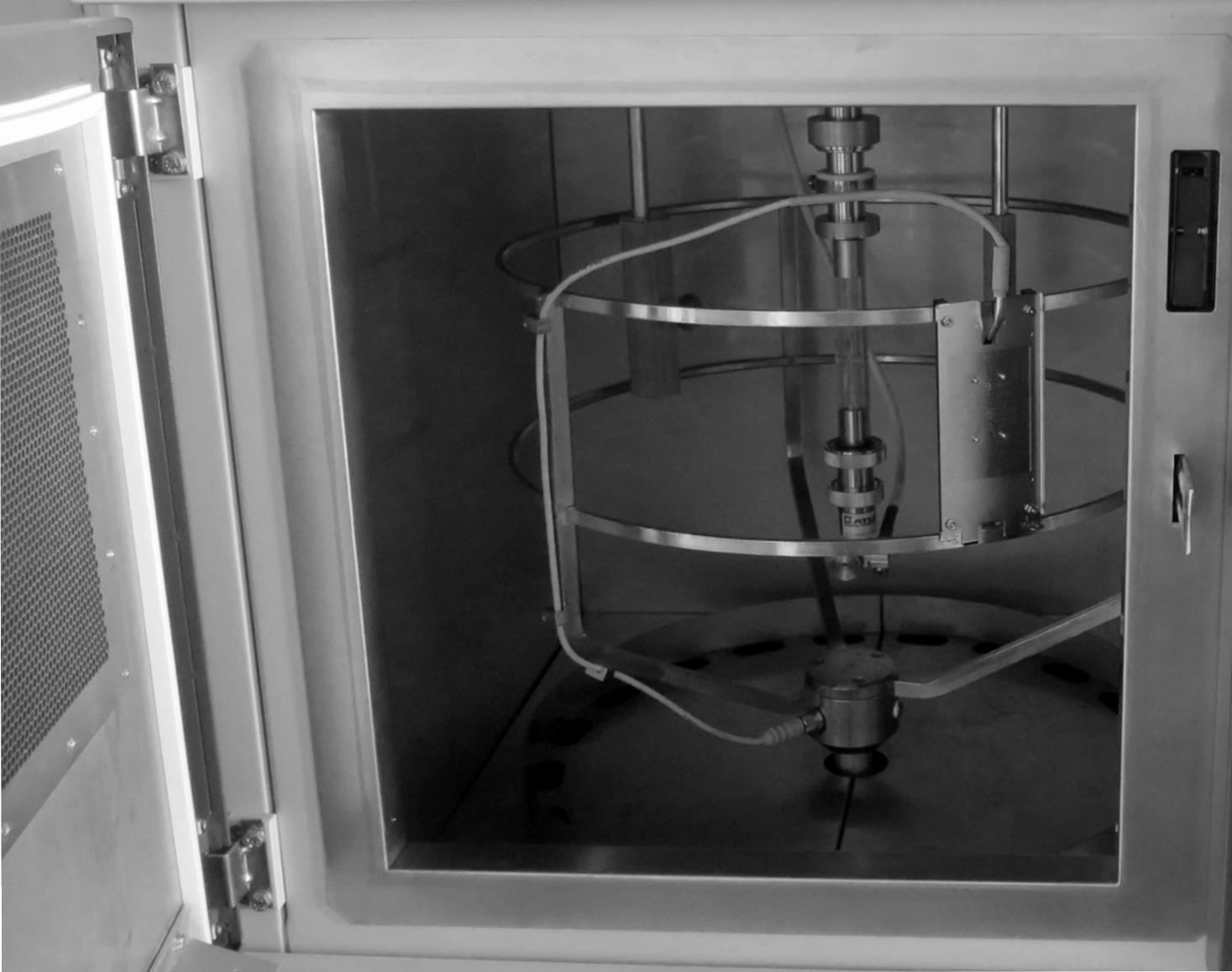
Timeline for workshops organized and held by the writing group after the conclusion of phase 1 activities.



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### 3. Contexts and 'Data Gathering'

This section presents:

<b>Previous reports (extracts)</b>	<b>p.20-26</b>
<b>Interviews with the members of the working group</b>	<b>p.27-32</b>
<b>Workshops organized and held by the writing group</b>	<b>p.33-62</b>
<b>Visits to other organisations/institutions</b>	<b>p.63-74</b>

Thus the section unfold and explore the three core areas addressed by the Working Group:

1. Statement of existing conditions (current)
2. Statement of preferred conditions (vision)
3. Proposal of methods to achieve vision (strategy).

Guidance for the reader: The coloring of the text in the following sections is reflecting the 6 key areas of strategies for achieving the vision which is unfolded in chapter 5. The coloring of the text reflects representative examples of how different aspects of the development work in earlier reports and in workshops organized by the writing group have been raised, discussed and suggested as areas of interest and importance to develop. The colored text refers to the 6 key areas of strategies for achieving the vision, like this :

1. *Interface with Research/KUV*
2. *Interface with Teaching*
3. *Space*
4. *Organisation*
5. *Identity*
6. *Budget and Funding*

## Previous reports

In addition to the terms of reference an appendix to the working group has been 4 earlier reports developed by staff at KADK and in addition a “Building strategic report” by Signal Architects:

1. Rapport: Dialoggruppen ved. værksteder (2010) by Lars Mikkelsen KA, Henrik Litske KA, Jesper Nielsen KA, Lasse Folke Pedersen KA, Poul Søby DKDS, Bo Haugesen DKDS, Denis Virlogeux DKDS, Thomas Alken DKDS, Tobias Koefoed-Nordentoft DKDS, Debora Domela DKDS. 40 pages.
2. Rapport: KADK værksteder i den nye struktur (2013) by Ida Engholm. 13 pages.
3. Rapport: Retningslinjer: Værkstedsbrug på KADK (2014) by Mathilde Aggebo, Ida Engholm. 2 pages.
4. Oplæg til strategi: Åbenhed og plads til eksperimenter (2016) by Jacob S. Bang, Heidi Bergstedt og Helle-Pia Morell. 5 pages.
5. KADK BYGNINGSSTRATEGI (2016) by Signal arkitekter. 31 pages.

The reports have among others made up the basis for the concepts of the workshops held by the writing group and this current report. Nevertheless while the previous reports in general have had an overall focus on practical aspects, space and tooling, the current report aim to extend these aspects and accommodate aspects of the overlap and synergy between research, teaching environment and workshop facilities within the concept of KADK:LAB .

## Report 1: Dialoggruppen ved. værksteder (2010)

The report describes overall questions that were raised in the introductory collaboration in 2010 between the staff from DKDS and KA. In addition the report describes the workshop environment at both institutions.

### Examples of overall questions:

What function do the workshops have in the future at the schools for Architecture and Design?

... when we merge there must be equal access for all training courses to all workshops?

... for digital processing at schools, however, begins to point out the creation of a new type of workshop in parallel with the traditional wood, metal and plastic workshops.

... will sales of material such as wood, metal, plastic and plastic be collected in one sale...

### Further suggestions and considerations from the report:

...building 155 and 160 as they look today. Those two workshop are therefore connected with a cover...  
...the canteen is included...

...division of workshop and service facilities

...a multi purpose room

A satellite workshop is, in our terminology, a wood and plastic workshop containing ribbon saws, slab pads and column drills.

... a combined plenary room and library where we can guide with study assignments and where teachers and students can discuss and plan ...

Facility: Card Workshop....a 24 hours open workshop that can be borrowed for a period of 2-3 days.

A vision for a division of KAM could look as follows:

1. The primary model workshops (wood and metal department)
2. Card workshop, level 2 entry H
3. Card workshop, level 1 entry H
4. 24 hours open workshop, level 1 entrance H
5. Institutes digital laboratory, level 1, entrance H.
6. A project room for larger models and workshops.
7. A workshop room with extraction for more "dirty" processes such as work with composite materials and the like

... larger workshops could be incorporated by developing the workshops as teaching rooms, thereby changing the division key for facilities.

... natural overlaps eg. a metal workshop that flows into a casting workshop that flows into a plaster workshop that flows into a glass workshop...

... the workshops gathered under one unit with the associated secretariat, in order to prevent the workshops from being considered only as a service function, but also included in the programs ...

"How the model workshop's resources are part of the general study progression"

### Report 2: KADK værksteder i den nye struktur (2013)

The report aims to make a status after the fusion of the schools of architecture and design and location at one address. In addition, the report ask to future needs and developments.

#### Examples of overall questions:

After the fusion and relocation.

How has it been since co-location? What works?

Are there any challenges and what are these?

Are there wishes / proposals for the role / location of the workshops in relation to the new academic structure?

#### Conclusions:

In summary, from the visits to the workshops can be concluded:

- The workshops generally express satisfaction with machinery, space and location after co-location.
- **The workshops generally wish to contribute more to the development of the subjects.**
- Workplaces are generally challenged by excessive user load in relation to staffing.
- It is demanded that the individual student has respect for all skills and not just his own.
- **The workshops do not wish for joint sales across workshops, but wish to maintain sales in connection with the professional advice.**

#### Recommendations and Visions for KADK's workshop:

- **Workshops must be more visible**  
**KADK's workshops must be more visible both branded** and internally on campus. The workshops are a unique asset to KADK, both nationally and

internationally, and of course this must be promoted and made visible. Strategy for strengthening the visibility of the workshops must be developed.

- Workshops must be research-driven

**The workshops must be research-driven and 'creative laboratories' for experimental practices and artistic development activities. This must be done by providing the workshops with more resources via external research funds,** networking and PhD projects and the factories receive status of laboratories for experimental business in relation to business collaborators.

- Expansion through mutual funds

**There must be increased focus on seeking external funds for both equipment and materials at the workshops.** In order to ensure that funds are raised for purposes that support KADK's strategy, a similar strategy must be laid down for when to seek funding and for what.

- Clear profiles

**The individual workshop must have clear rules, guidelines and profiles. This will enhance the profile of the individual workshop, and hopefully also strengthen students and employees' respect for the skills of others than one's own.**

- KA and KD's wood and metal workshops

**It is suggested that the KD Woodworking Site and the Workshop for Industrial Design become affiliated with the Department of Furniture and Rooms, thus becoming a 1: 1 workshop.** KAM will be a large scale workshop for the entire KADK. This makes the capacity of the workshops more efficient. KAM is placed under KA's leader(fagleder) and is thus more closely linked to the academic environment.

- Plastic workshop

It is proposed that the Plastic workshop is reestablished in collaboration with the Schools of Visual Arts, The Royal Danish Academy. There must be a plan for this and for the use of the plastic workshop, institutional affiliation and collaboration with the Schools of Visual Arts, The Royal Danish Academy.

### Report 3: Retningslinjer: Værkstedsbrug på KADK (2014)

The report is a follow up on the report: KADK værksteder i den nye struktur (2013) and from the Dialogue Group concerning workshops.

The report aims to develop a priority order for the use of the workshops, which was valid from September 2014.

#### Priority order for the use of the workshops:

1. Degree and bachelor projects.
2. Scheduled Workshop Teaching within a specialization.
3. Students with a relevant specialisation in relation to the workshop working with education-related projects.
4. Scheduled courses from other areas of specialisation.
5. Introductory courses for workshop users (Driving license courses).
6. 'Open Workshop'.
7. Students from other areas of specialisation who have driving licenses in agreement with workshop leader.

### Report 4: Oplæg til strategi: Åbenhed og plads til eksperimenter (2016)

The report describes a vision for the workshop environments with a focus on Experimentation.

#### Overall themes and recommendations:

- strengthening the link between workshops, teaching and research
- better balance between analog and digital capabilities
- fundraising / sponsorship for new digital workshops
- establishing digital collaborations with companies that are at the forefront of the field of digital technologies .
- embedding new technology or highly advanced technology such as robots in a study program, rather than open workshops
- All programs include workshops ...
- The workshops are gathered under joint administrative management
- Development of a large common 'exchange room' in the courtyard between building 155 and 160.
- Establish / develop small local satellite workshops to remedy the pressure at the central workshops.
- Workshop-initiated and-driven collaborates with business and educational institutions.
- VIPs with experimental practices wishing to use workshops should do so in collaboration with workshop manager (KUV) ...
- Forums for ensuring the meeting between VIP and workshops

#### Models for "Access to Workshops":

Model A: Program-based access to workshops

- Each program is firmly connected to some primary workshops, eg. Furniture = Wood 1: 1, Wood Scale, Metal and Textile.
- Possible agreements with tutors at other workshops - alternatively fixed recurring open days (see model C)
- Space for more complex constellations, which in between occur with students with a special profile. One might consider placing Selection of special workshop combinations at the candidate level, where The students are supposed to be more clarified.

Model B: Driving license-conditioned access to workshops

- Driving license courses for primary workshops where the students can work completely independently.
- Introduction to secondary workshops where the students can work under the presence of workshop staff / tutors.
- We recommend that KADK works intensively with a good workshop culture. Tools disappear and machines are destroyed at some workshops. It does not happen at Gardermoen, and the explanation is found probably in the workshop's close connection with the teaching.

Model C: Open workshop at regular recurring times

- Daily opening hours for all
- Every 2, 3 or 4 week, where everyone has access to everything and there is extra tutor-staffing.

“Low-hanging FRUIT” - collected from the idea catalog:

1) One joint KADK workshop committee.

2) Joint administrative management, eg. the chairman of the joint workshop council may have expanded powers with staff and budget responsibility, an overall view of investment and space in KADK's institute management.

3) The professional management of the workshops is closely linked to the academic environment. Eg. based on KD's model, where the strength is the close connection to the educational environment.

4) Uniformed employment structure, including looking at the opportunities and obligations that must be in the workplace positions.

5) Fusion of metal workshops: one large joint KADK metal workshop.

6) Fusion of woodworking sites: function-divided premises: scale and 1: 1 production, optimized with the location in the same building.

7) One common plaster / concrete molding workshop (formerly KD metal workshop)

8) Screen printing is moved to the same floor as the “Press Workshop”, which was also the original idea.

9) Visually (digital) overview of all planned workshop activities.

10) Forum that guarantees the meeting between VIP and workshops, eg. dialogue meetings solely with focus on development of the workshop collaboration.

11) "Mandatory" workshop day for all employees once a year.

12) All workshops are located central on campus - primarily in building 155 and 160 -to promote knowledge exchange, student's mutual inspiration across professional and interdisciplinary collaborations.

13) Workshop buildings 155 and 160 should only accommodate functions related to the education. We recommend that other location of non-education activities is found somewhere else.

14) It may be considered to involve parts of the building 90 to workshops or to the large exchange room mentioned under 'KADK's distinctive.

#### **Report 5: KADK BYGNINGSSTRATEGI: Signal arkitekter (2016)**

This report differs from the others by being developed by an external company: Signal Architects.

##### **Background:**

A majority in the parliament has decided a new dimension for KADK, which implies a 30% reduction in the study program. KADK has therefore launched a number of analyzes to contribute to the prioritization of the future educational landscape within the KADK's three schools for architecture, design and conservation.

SIGNAL has been asked to develop a building strategy that contains concrete suggestions on how to create building optimization and possible area reduction and efficiency while at the same time being able to maintain and develop the quality of study, teaching and working environment for students, VIPs and TAPs.

The report reflects on and suggests strategies for this building optimization and possible area reduction and efficiency at KADK; a professional and social campus, and efficiency of square meters.

##### **Challenges in use of the buildings:**

The day at KADK varies greatly in relation to the use of space.

Bottleneck issues is found in peak periods of selected facilities.

The use of facilities within the center of campus is difficult due to distances.

##### **RECOMMENDATIONS:**

##### **GATHER CAMPUS AT PHILIP DE LANGES ALLÉ**

The Design School, the Architecture School and the Conservation School will be gathered at Philip de Langes Allé, including all workshops and library functions.

##### **AREA OPTIMIZATION AND REDUCTION OF BUILDINGS**

The total building area at KADK can be reduced considerably due to the new dimensioning and by replacing privately owned rooms for common purposes and introducing workstation ratios.

##### **GO FROM PRIVATE ROOMS TO COMMON FACILITIES**

Ownership of seats is replaced as far as possible by jointly-owned rooms and facilities.

##### **IMPLEMENT RATIO ON STUDENT, VIP AND LAP WORKING STATIONS**

SIGNAL recommends a ratio of 80 for students; i.e. 100 students are divided into 80 workstations.

SIGNAL also recommends a ratio of 80% for VIP employees and a 90% ratio for TAP employees.

##### **ROTARY STUDY WHEEL**

The rotary wheel is recalculated so that peak load at workstations and workshops is spread throughout the semester

## ACT OUTDOORS

There are plenty of outdoor space for example covered workshops that can pull alarms away from the study environments

## ACT ROOM OVER DAY

Canteen and other common areas can be activated throughout the day to maximize the potential of the buildings

## ELABORATIONS:

It is recommended to organize the planned study activities at KADK more even throughout the semester in a way that study spaces, workshops and auditoriums can be utilized more even throughout the year, thus reducing bottlenecks.

VIP employees must remain available to each other and to the students at the institutes, at the same time with an increased opportunity to create relationships across. The activity-based work environment related to the territorial frameworks involves a replacement with a common framework across campus. This must be utilized daily to obtain an effective use in space and mobility, when activities, employees and students cross boundaries of the institutes. The activity-based working environment must offer and support the various activities from collaboration to individual work that requires contemplation.

TAP employees are key persons in the daily operation of KADK, and knowledge and insight into KADK's core tasks is therefore very important regarding internal coordination.

Accessibility and coordination are strengthened when KADK's TAP staff gathered in the central administration building and core knowledge can be supported through mobility and use of the common facilities across campus.

Students: By sharing study space and facilities the access is more available since the students is not at their study place 100% of the time.

The students work in an activity-based study environment where they share and at the same time they are accessing more facilities than they are used to. It means facilities for individual work, for project work, contemplation and social gathering.

It requires a new behavior coming from the individual work concentrated at the individual study workspace to the use of different facilities and activities. And it requires a conscious and respectful behavior in which zones are respected, and where the responsibility is taken for a common clean and quiet study environment accessible for all.

Learning and working zones: Each professional area is divided into a contemplation zone and collaboration zone. Noisy low-skilled workshops must take place in the workshops that are located close to the student's study workstations.

Here the professionalism and the characteristics of each program are in focus.

Each professional area is divided into one or more active and quiet zones and is considered to be for example for 25 students. Active zones contain project rooms, low tech workshops, kitchen and lounge areas.

There are two types of workstations, the always available and the bookable, which can be booked over a longer period of time in relation to a project, -for example, if you want to build a larger, stationary model, make great mood boards etc.. Here, there is also "silence rooms", which is smaller space where the students can find complete peace for highly concentrated work or telephone calls.

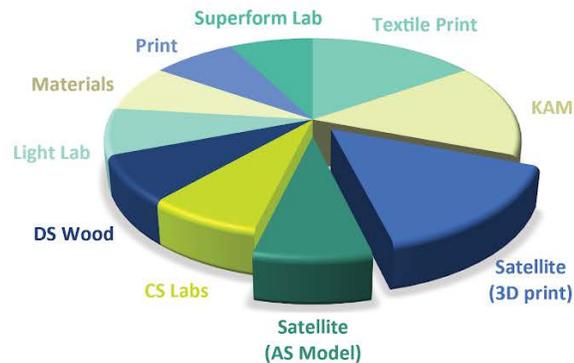
## Interviews with the members of the working group

To gain a deeper insight into the functioning of the workshop/labs and to supplement the data already existing from the previous four reports, the Writing Group initiated a questionnaire for members of the Working Group. The questionnaire focused on relationships with Teaching/Research & KUV/Industry Practice.

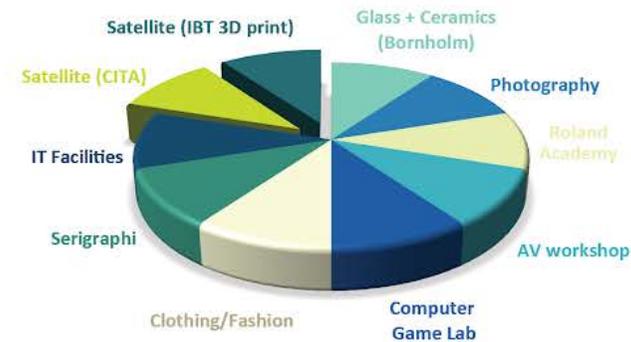
The questionnaire was conducted as an interview, with representatives of the Writing Group visiting the interviewees in their context. This allowed for a more informal discussion to develop and provided the Writing Group with a greater insights into the nuances of these relationships, where strong relations existed and where relations could be strengthened.

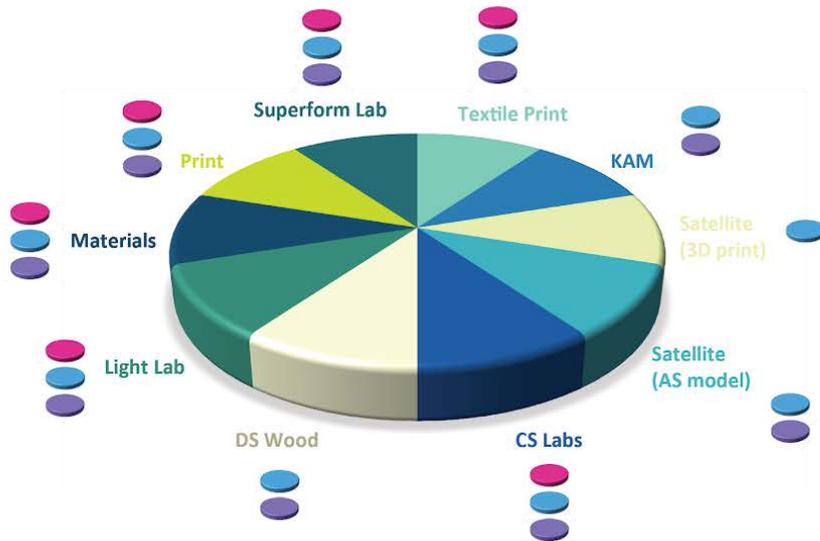
15 interviews were conducted across Feb/March 2016.

### WORKSHOPS REPRESENTED



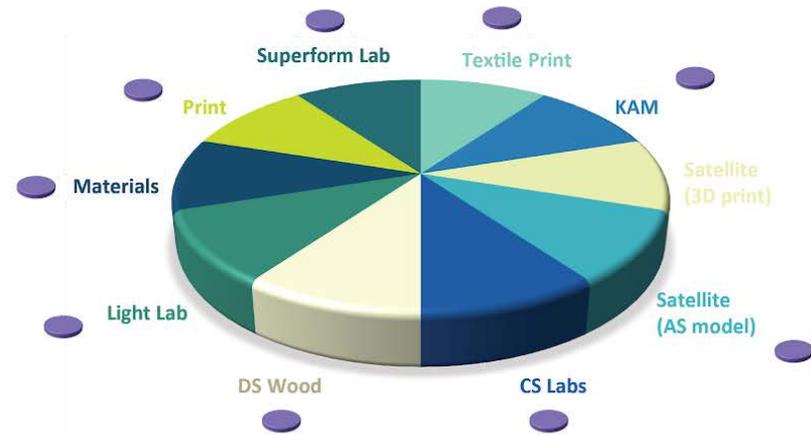
### WORKSHOPS NOT REPRESENTED





- Industry/Practice
- Teaching
- Research

## Workshop Relations



### Internal:

- Embedded PhDs / Researchers
- Associated PhDs / Researchers
- PhD / Researcher users
- Research Collaborations
- Source of reference

### External:

- Embedded Funded Projects
- Associated Funded Projects

## Relations to Research/KUV

## **KEY POINTS FROM INTERVIEW DISCUSSIONS**

### **Communication/Integration**

#### ***Teaching Interface:***

Improve dialogue with programme responsables / study aims and study schedules

-or-

Establish integration due to changes in programme landscape (fx. textiles/ceramics)

#### ***Inter-Lab:***

Sharing / Responding / Planning / Strategising

#### ***Industry/Practice Interface:***

Strengthen external networks across academic (e.g DTU, Borås), industry (e.g Köhler, Kvadrat, JAP, Force Technology, 3dPrinthuset, Fibreline, Junkers, FotoSolar), practice (e.g BIG, JAJA) and cultural establishments (e.g Tate, MoMA)

## Space Considerations

### *Consolidation @ Holmen Campus:*

Conservation School moving from Esplanaden - numerous lab spaces often with highly specific space needs (env. control/conditioning)

Superform Lab - large amounts of specialist equipment

Combining workshops (fx. Metal (DS)-Metal (KAM), Wood (DS)-Wood (KAM))

### *Wishes:*

1:1 Mock-up space(s) / Flexible spaces - support multiple uses across disciplines and 'embedding' of projects

Dedicated space for materials supply and selling at ground level

Common 'Lab Staff Room'

New workshop focus areas e.g VR/AR, Biology related

Increased proximity / spaces to force mixing

Greater visibility

### *Ideas:*

Covering courtyard

More satellite workshops

Hub (collects expertise) - Satellites (places of production)

## **Improving Culture**

### ***Strengthening Across Boundaries***

Managing 'migration' of students between workshops

'På tværs' courses

Academic / Lab relation - directly associated. Used to be the general case.

### ***Development of digital practices***

More alignment and access

More experimentation

More development

### ***Production v. Experimentation***

Supporting of both while strengthening critical reflection

### ***State-of-the-Art***

'Strengthening experimental edge - attitudes more than machines'

'State-of-the-art starts with culture more than facilities'

'State-of-the-art tools are nothing without state-of-the-art-thinking'

## **Expanding Access/Supporting Invested Curiosity**

### ***From outside: Summer Schools***

Fee-paying courses for workshop practices

### ***From Inside: Workshop Orientated Personnel Development***

Ideas, plans, projects - how to test relevance and support?

### ***From Inside: Salon / Electives***

Structured introductions/courses over a semester

Open to all (staff & students)

Supporting cross-fertilisation (schools/educational level)

## **Budgets**

### ***Income sources (current):***

Operating budgets (small, in all cases)

Material sales / machinery charges (substantial, in many cases)

### ***Income sources (latent):***

Consultancy to external parties

Fee-paying summer schools

### ***Costs / Investments:***

'Wear-and-tear' - maintenance / breakages

Certifications - e.g CIE

### ***Sponsorships:***

Some material/equipment sponsorships exist but quite minor - could be developed

## Workshops organized and held by the writing group

Following workshops has been held by the writing group at KADK:

1. Three workshops in the working group
2. Three workshops with representatives from each school: Architecture, Design and Conservation respectively
3. One workshop in the status meeting for all development projects at KADK
4. One workshop with students from the three schools: Architecture, Design and Conservation representing BA, MA and PhD level.

## Three workshops in the working group

### Workshop 1 with the working group

KADK: LAB workshop 2 May 2017 at. 12.00-15.45 at the School of Conservation, Esplanaden.

Content:

Group work with the aim to outline the vision by group work centered around 4 aspects: Spatial Organisation, Culture & Academic Relations (teaching & research), Fostering Networks (int. & ext.) & Identity, Timeline/Economics.

Summary from the day, including extracts from the discussions in the group work:

Participants: Mathilde Aggebo, Phil Ayres, Flemming Tvede Hansen, Malene Kristiansen, Debora Domela, Annette Kjær, Søren Vadstrup, Anders Hermund, Bitten Hegelund, Katja Bülow, Mikkel Scharff, Henrik Karsbøl, Marie Holst Lorenzen, Henrik Lithuanian, Bo Haugesen

Working in groups with the vision for KADK: LAB:

The following working groups were set up for today's workshop:

Group 1 - Spatial Organization: Mads Johnsen, Debora Domela, Henrik Lithuanian, Flemming Tvede

Group 2 - culture and academic relations (teaching and research): Anders Hermund, Bitten Hegelund, Søren Vadstrup, Marie Holst Lorenzen

Group 3 - Fostering networks and identity (int. & Ext.): Bo Haugesen, Katja Bülow, Annette Kjær, Mathilde Aggebo

Group 4 - Timeline / Economics: Mikkel Scharff, Malene Kristiansen, Henrik Karsbøl, Phil Ayres

Presentation of group work:

Group 1 presentation - spatial organization:

[The canteen is closed down and fitted to workshops. Cover of building 155-160 with flexible roofing options for the area between 155/160 / canteen.](#) The workshops must be in street level, at the village, so you can look in - you want to meet the school in a different way and open the area. Students must have accident insurance to use the workshops. Satellite workshops are linked to specific study environments to give greater responsibility.

Feedback:

Good idea with street workshops and visualization. Also nice idea to drop the canteen. Good to think new and different. Possibly. let the workshops grow up a bit too. The students will learn to be more disciplined about tools and words. Suggestions to involve the quayside as well.

Group 2 presentation - culture and academic relations (teaching and research):

Presentation of model for difference between workshop and teaching.

Several types of use of the workshops. Studium and workshops must be thought better together; It is about communication and organization between programs and workshops. Issue of driving licenses, so only those who know how the machines work are allowed to use them; Extension of driving license form, eg as elective course. Address the balance between central workshops and satellite workshops. Pay attention to the use of workshops in the overall thinking.

Feedback:

Think open study space into the planning where students and teachers can sit. A good idea of extending the driving license, for which students can choose - more methodical approach. Driving licenses take 6 weeks at KAM, but one might consider offering something extraordinary to those who attend workshops or other, over a weekend. Resources and capacity must be considered.

Group 3 presentation - fostering network and identity (internal and external):

Identity and visibility of ourselves. Gather the workshops and make them more visible. Limited communication between workshops and departments.

Building 90 could contain all the workshops - an entrance door, a map.

Inspiring with visits to KK's workshops, where there are study places at the workshops - this part could be interesting for Holmen as well. Benefit from having a framework called KADK: LAB, which means that we are stronger in relation to external collaborations. We need to move into smaller space and keep our future needs in mind, because we will attract fewer students.

Feedback:

Building 90 is classified as office space and can not be converted to workshops immediately. Building / service could make use of the same workshops as the students instead of having their own free space. The workshops should come up with their bids on what they need of m2.

Group 4 Presentation - Timeline / Economics:

Discussion of ambitions. What can you get for the money, how can you? save and earn money. Must ask for money for machine investments today, but want the opportunity to earn and spend money on equipment. Recruitment to the workshops - both manning and more strategic. Cooperation with external for funding. Regular exhibitions for KADK: LAB, which will help create visibility. Earnings in summer schools, driving licenses, advice etc. The workshops must be above the earnings and the money should not go to the administration. External funding from eg Realdania. Ex. weekly day, where the workshops are "locked" and where a salon can be kept.

Feedback:

Think big to attract external funding - it will also strengthen our brand. We need to develop a vision and we have the time to do that. Discussion of taking your own graduates into the workshops after graduation - this is complicated by the fact that we need our graduates in work.

Ad. 4: The further development process in KADK: LAB Working Group

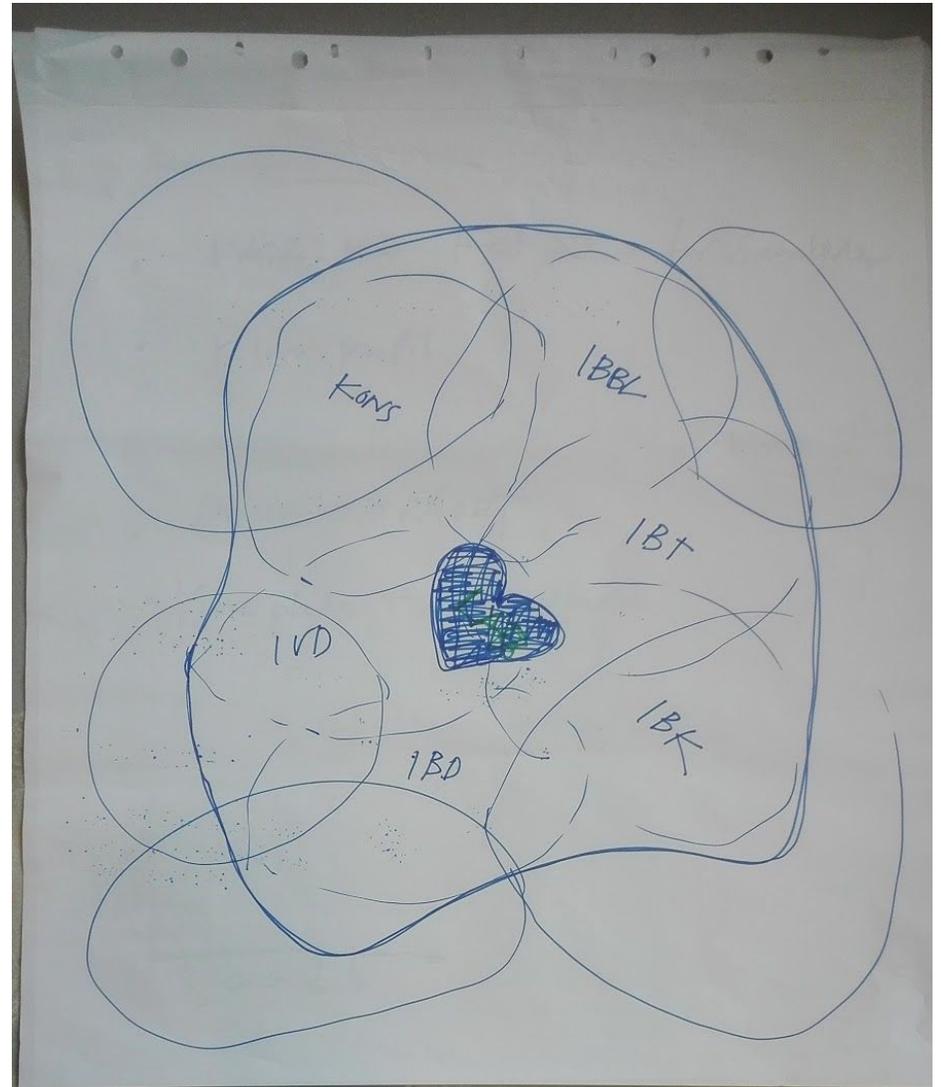
The writing group takes the ideas forward and sends to the working group.

Next workshop will be held in early August and not in June due to exams.

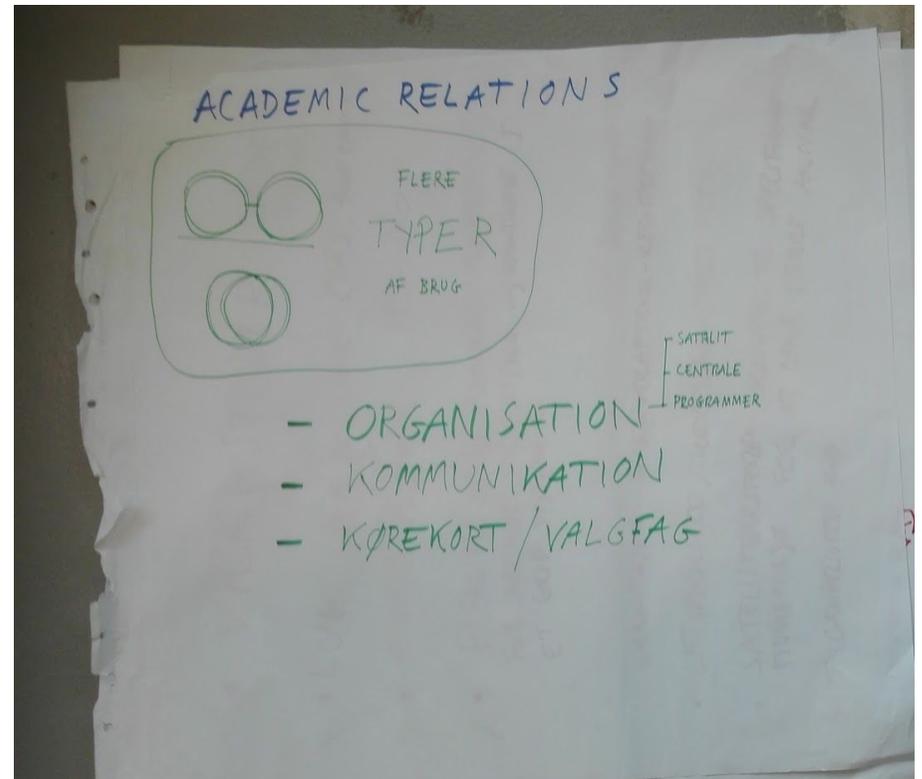
Next workshop must focus on the vision.

The presentations and disseminations from the group work were based on posters developed in the groups.

- KADK: IAS FORDEL for Sanabjær
- Klar profil
- Rigtigt Rum, der kan rumme ~~det~~
- SAMME OMRÅDET
- Mere plads + studiepladser



- VÆRKSTEDER GADER (PLAN)
- x • LUK KANTINE (BÅD, FOODTRUCKS)
- x • OVERDÆKKE 155-160
- x • FLEKSIBLE OVERDÆKNINGSMULIGHEDER FOR AREAET ML. 155/160 OG KANTINEN I ET GRID SYSTEM
- FORSIKRING/DEPOSITUM VED BRUG AF VÆRKSTEDER - FINGERAFTRYK-REGISTRERING
- LETVÆRKSTED / KORTVÆRSTED 24/7
- SATELLITVÆRSTEDER KNYTTES TIL SPECIFICKE STUDIEMILJØ FOR AT OPNÅ STØRRE ANSVAR
- TILGÆNGBARHED ↔
- HAVN + KAJ



# AMBITIONS

FINANCIAL AUTONOMY

RECRUITMENT

INCENTIVES FOR EXTERNAL  
FUNDERS/PARTNERS

REGULAR KADK : LAB EXHIBITIONS

# TIMELINE

WORKING WEEK

	MON	TUE	WED	THU	FRI
AM					
PM					

ELECTIVE/  
SALON

# VALUE ENGINEERING

- KADK: LAB COMMON BUDGET

RECRUITMENT

# FUNDING BIDS

E.G. REAL DANIA

## - KORAL

- vi gør det idag - eller hvad?
- Personbåret

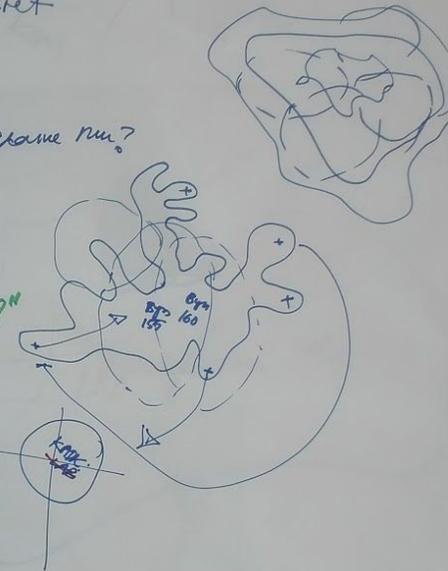
Er det sikrere nu?

KADK: LAB  
EN RAMME

"MAP"

V-SYNING

- fx stud. kan ikke finde
- enten fx producenter kan ikke finde vej.



## Workshop 2 with the working group

KADK: LAB workshop August 15, 2017 at. 9.00-13.30 on Superformlab

### Content:

Group work with the aim and Focus: Detail Vision.

Group work centered around the “Boundaries of KADK:LAB” and “Your personal relation to KADK:LAB”

Participants: Mathilde Aggebo, Mikkel Scharff, Flemming Tvede, Frederik Seehusen, Mads Johnsen, Anette Kjær, Deborah Domela, Helga Kjærbye, Phil Ayres, Bitten Hegelund, Henrik Lithuanian, Søren Vadstrup, Katja Bülow, Malene Kristiansen

Summary from the day, including extracts from the discussions in the group work:

The workshop today focused on the following three questions that will be discussed in groups, but other scenarios are welcome. The questions should help define the boundaries of KADK: LAB.

1. KADK: LAB is constituted only by research and knowledge production
2. KADK: LAB is constituted by all activities related to the workshops
3. KADK: LAB is constituted by all activities related to workshops, research and knowledge production and the study environment. KADK: LAB is KADK.

In relation the groups also discussed the following questions:

1. How do you fit into the vision and organization of KADK: LAB?
2. Where and how do you see yourself in the vision and organization of KADK: LAB?

3. How does the vision and organization of KADK: LAB develop opportunities for you?

4. What do you expect KADK: LAB can do for you?

5. What do you want the head of KADK: LAB and the professor to do for you respectively?

An overall vision for KADK: LAB was presented, which included a critical and creative hub; workshop and laboratory facilities that support top-level research and education at KADK; develop and strengthen strategic partnerships with academic, industrial and professional practice; be innovative in relation to existing practices; provide support for critical experimentation and production of new knowledge.

A draft of the organization of KADK: LAB, for developing technological and general competencies was presented. A KADK: LAB manager will be responsible for the workshop staff and it is supposed to set up a KADK: LAB committee with a future professor as chairman. There has been allocated resources to a technical manager and a professor.

It was discussed how student access to the workshops and how teaching is brought into the organization of KADK:LAB. The doors should not be open to everyone in all workshops, but there may be multiple levels of access. A common policy and strategy for KADK: LAB must be developed.

The presentations and disseminations from the group work were based on posters developed in the groups. See below.

Group 1: Phil, Frederik, Mads and Henrik

Group 2: Bitten, Katja, Mikkel, Helga and Flemming

Group 3: Mathilde, Søren, Malene, Debora and Annette

The presentation was followed up by a discussion in plenum:

We need to think about resources and priorities. Lightlab and superformlab must be considered. Create equality - making and thinking. KADK: LAB is the total. There must be focus on leadership and unity - you do not want to cloak the connection with the academic environments. KADK: LAB is specialists and experts, but have arms out to the institutes. The competencies of the workshop staff must be looked at - possibly study professionals with special skills.

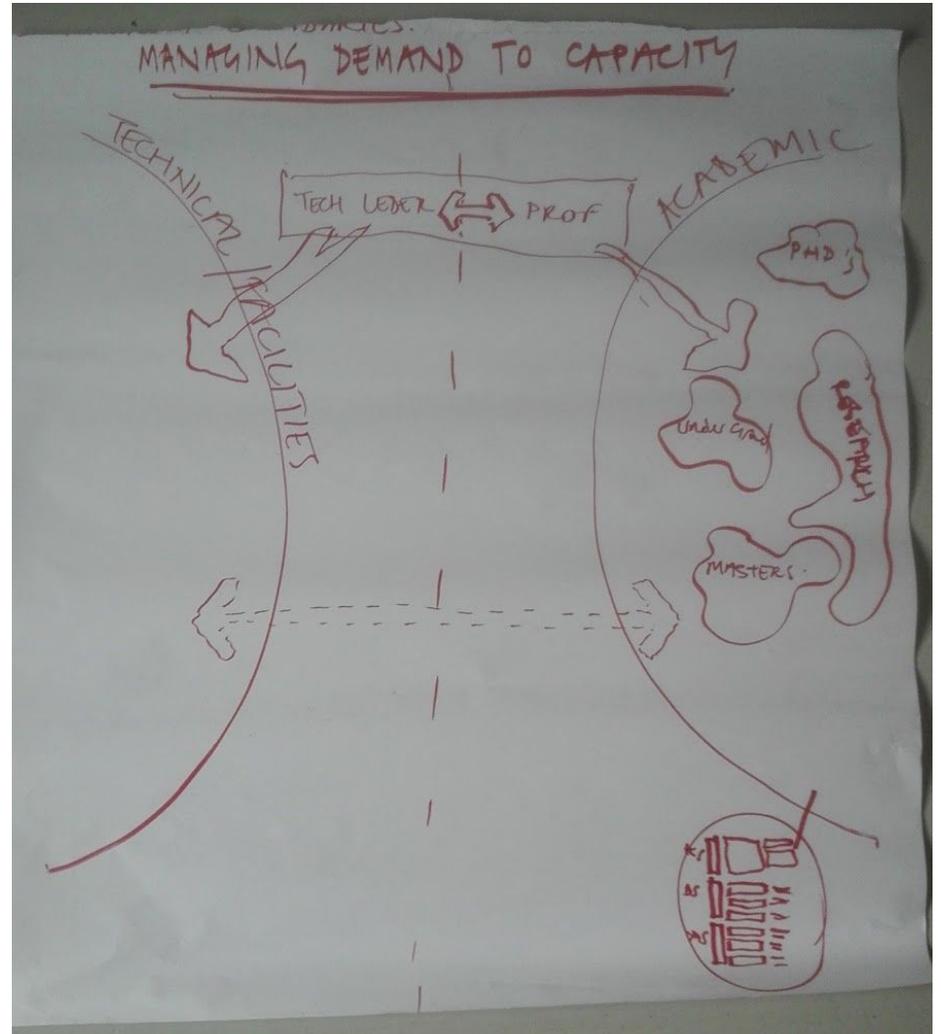
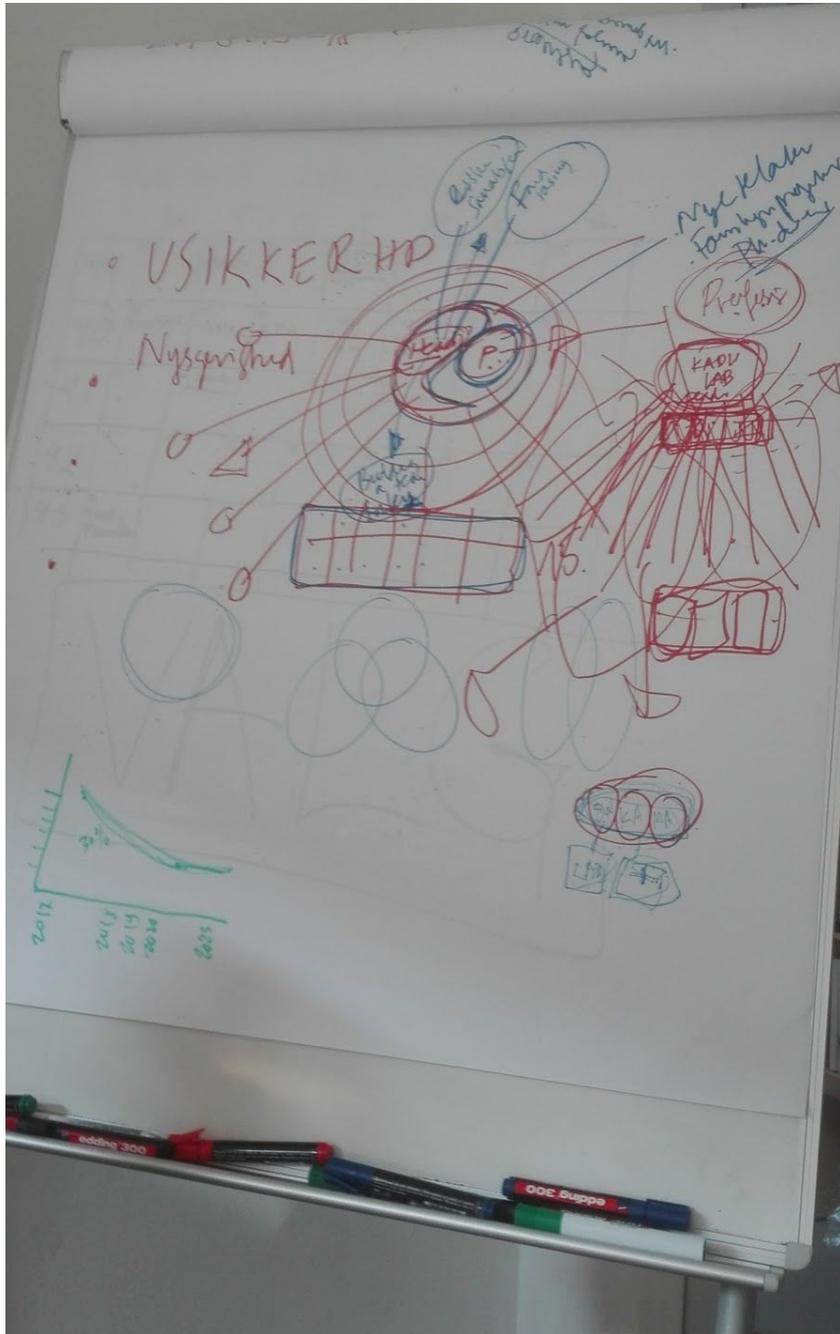
None of the three questions were the right solution. It is research and KUV together with the teaching environment that defines KADK: LAB, which must be integrated and be one. It is expensive with new managers. The leaders must tie the laboratories together and create networks. Possibly a researcher in the environment. Focus on KADK's identity and base. KADK: LAB can be shared between a technical manager and a professor, where the technical manager becomes responsible for the function while the professor becomes responsible for the external. The definition of LAB is production.

The concept of a professor was discussed and there were several who expressed concern about the recruitment as there was doubt as to whether a professor would have a sufficiently broad focus that would be necessary for the position. Proposals for the professorship instead to go between institutions for a few years at a time. The professor will help lift KADK: LAB and, among other things, acquire more PhDs and create more external funding. The professor will help to associate KUV, research and teaching with the workshop environments. For both management positions, both have a relevant academic background.

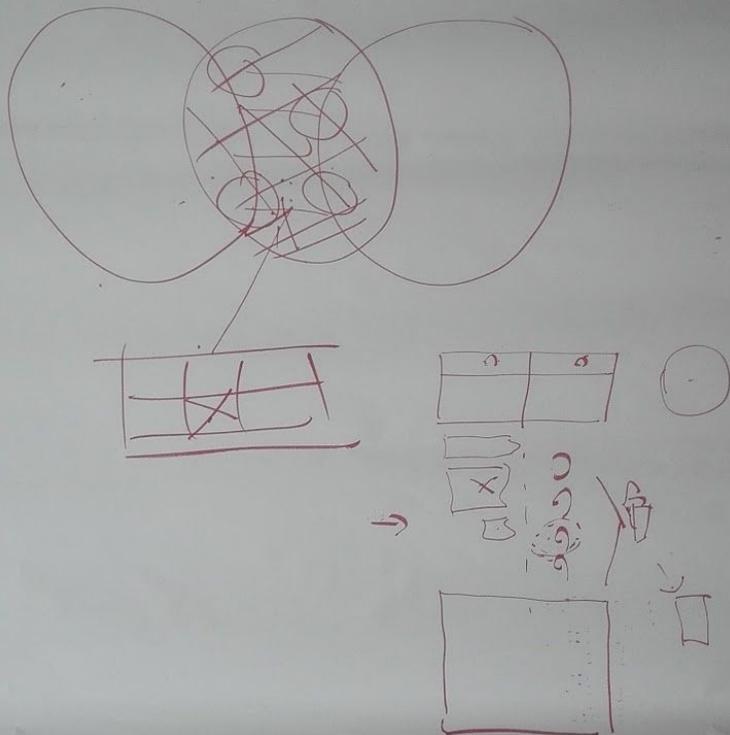
It was pointed out the problematic that the academic pressure in the coming years are the same, but at the same time the staff is cut down.

The vision must be ready before we start hiring. Job postings are expected to be canceled in September / October. The job posting will be consulted by the working group. There is much administration in relation to what is happening.

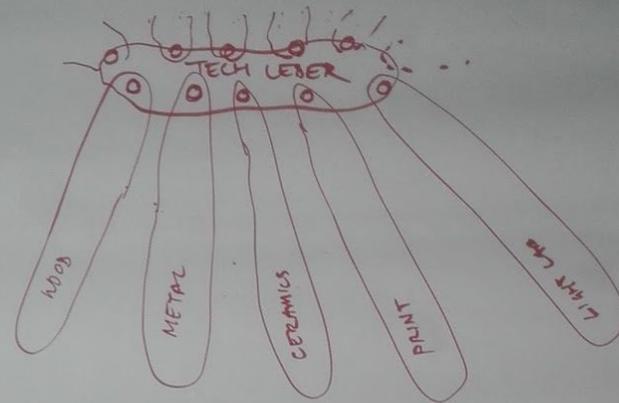
There must be focus on staffing the workshops. Workshops must be used actively after introductions, as learning otherwise will be forgotten. There is no experience that workshops are strengthened.



MODEL FOR INTEGRATING TEACHING WITH  
KADK: LAB.



ENSURING FUNCTIONALITY

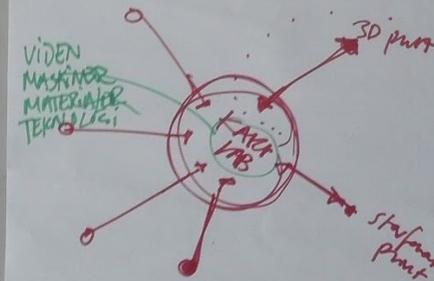
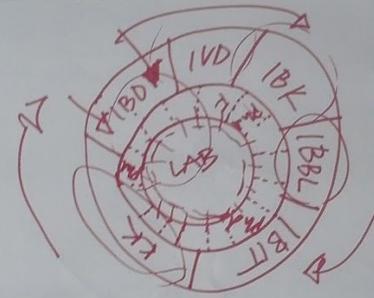
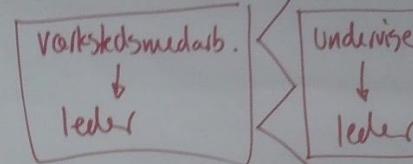




## PERSONAL / ORGANISATION

1. UNDERSTØTTE VL. TIL AT FÅ FRIKØB OG DEL AF FORSYNING + UUV
2. SKAFFE MIDLER TIL USTYR i FORB. MED FORSYNING, MEN OGSÅ TIL UNDERVISNING.
3. OVERBLIK OVER ØKONOMI, TIL USTYR. F.ØS. GIVE OVERBLIK
4. ~~LEDER~~ LEDELSE OG FACILITATION
5. TEKNISK LEDER OG FOKUSERER PÅ NY TEKNOLOGI OG MATERIALER TIL AT UNDERSTØTTE NY FELTER
6. PROFESSOR NN. KUNNE VÆRE EN SOM METTE BRUNSGAARD / LITA DER SAMLER/SAMARBEJDE MED MANGE FELTER MED NY TEKNOLOGI SOM FACILITATION

## UDFØRNING:



Realistisk Vision ← **Resources**  
*MUST*

MODEL = IYSLAB  
FIRM/LAB

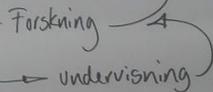
Værkstedsmedarbejder  
integration

Undervisning / underviser

MAKING + Thinking

↓ ↓  
VÆRSTEDSMEDARBEJDER = UNDERVISER  
||  
MSO (med tanke)

KADK: LAB



KADK: LAB



TRADITION + Teknologi

KADK: LAB

→ innovation

Making ~ Thinking

MODEL - Super Firm Lab

KADK: LAB



Process og Metode

↓  
værksted defineret af process  
og ikke materiale

KADK: LAB  
BEHOV

Nærhed/Tæthed ml. værktøjer  
til undervisning  
for studerende

### Workshop 3 with the working group

KADK: LAB Working Group d. 12 October 2017.

#### Content:

Group work with the aim and focus: Defining Strategies for Achieving Vision

Participants: Malene Kristensen (MK), Bitten Hegelund (BH), Katja Bülow (KB), Anders Hermund(AH), Annette Kjær (AK), Mads Johnsen (MJ), Henrik Lithuanian (HL), Bo Haugesen (BHo), Debora Domela (DD), Mikkel Scharff (MS), Henrik Karsbøl (HK), Marianne Schrøder (MSCH), Flemming Tvede (FT), Mathilde Aggebo (MA), Heidi Bergstedt (HeB)

Summary from the day, including extracts from the discussions in the group work:

5 key areas of goals and strategies for achieving the vision was presented for the discussion in groups:

#### 1. Goal: Engaging and strengthening of teaching

Making as a core intellectual activity.

Possible Strategy: KADK:LAB host the 6 weeks blok BA 1 semester:

Experiment, Material and Technology.

Reference : Part 1 and 2 in the vision

#### 2. Goal: Opening up the workshops facilities

Accommodating the novice and the expert

Possible Strategy: Salon. Open afternoon workshops in labs, e.g. each week organized and introduced by e.g. the head of the workshop, a user, a researcher.

Reference: Part 1 and 2 in the vision

#### 3. Goal: Establishing new and hybrid making practices

Possible Strategy: Workshops are hybridized.

Unfolding Question: What kinds of models for hybridization can we envisage?

Reference: Part 2 and 3 in the vision

#### 4. Goal: Aligning the spatial organization of KADK:LAB to the Vision.

Possible Strategies: Three different spatial proposals.

Unfolding Question: What are their relative merits and failings

Reference: Part 1 and 3 in the vision

#### 5. Goal: Financial sustainability

Proposed Strategy: KADK:LAB should be active in applying for large grants

Unfolding Question: What are the relevant bodies to be applying to? And with whom?

Reference: Part 1, 2 and 3 in the vision

Extracts from the discussions in the group work:

Group 1: KB, MK, BH:

- **How, who and why. Good idea to map external partners and their own equipment and what can we access and what collaborations we can create.** It is being made one study of which production sites are found in Denmark regarding fashion and textile. We could possibly do a corresponding in the workshop area. One must be able to judge workshops as well. **We do not need a very complex park of equipment here as it requires more economy than we have and more staffing, but we need to find external partners like so, in turn, can get the experimental approach with us.**

- **Workshops in the exhibition hall and canteens: disadvantages of noise can be a problem and the floors are maybe not strong enough.**

Advantage: Large room where you can gather great features somewhere.

Building 68:

Bad light for the bottom but close to the rest of the campus and on the quayside. Important to furnish to teaching functions and adaptation of the different larger spaces. Also for team sizes. e.g. remove the large square tables so that you can combine teaching and study places better.

Perhaps more need for a table island. The fact that each student has a table is not a necessity and so you could have more flexible table designs

Group 2: MA, BHo, AH, AK:

- Fund applications we are going to start already now, as the funds will help determine what they are supports how can they see themselves in this?

- Establishment of new hybrid mega practices. Yes, thank you, but requires time and resources. One could make a development pool to support it. You could do it both with internal and external parties. Form follows function, now also technology and sustainability.

- Opening up facilities. Everyone can not just come to all the workshops when they want it.

Be a part of something, for example a project or a course of education.

- Engaging and strengthening technology: well, can be developed more. Lab must also be a provider of teaching. However, it requires an extreme focus on planning.

- Location of workshops: Canteen community with the other artistic education at Holmen. Analysis: Where can we collect the lists of correct answers at Holmen? We would like to think pragmatic. The canteen is very stimulating for the study environment. We have to innovate in relation to team sizes and didactics. Workshops and labs must be much more visible on campus. e.g. outdoor display. Cover between the two workshops is needed, -and "campus" has to get out building 160.

Group 3: DD, MS, HL, FT:

- Teachers and researchers are committed to certain amount of hours at the workshops. For example, projects could be developed in the exhibition hall/a mixed workshop and exhibition space.

- Very diverse culture at the two schools, HL has a "sausage factory", difficult to integrate and a better understanding of this has to be developed.

- Frameworks and structures where employees can meet need to be developed. Today it is informal meetings.

The presentations and disseminations from the group work were based on posters developed in the groups:

Goal: Aligning the spatial organization of KADK:LAB to the Vision.

Possible Strategies:

Three different spatial proposals.

Unfolding Question:

What are their relative merits and failings

Reference: Part 1 and 3 in the vision

- hvilke bygninger er den bedste ramme for at sætte nye værestedv.
- tank pragmatisk

Goal: Establishing new and hybrid meeting practices

! Prægedsmøder! Jotak, der fortæller Udvidelsesmidler!

Possible Strategy:

- Træ og ressource til udvikling af nye væresteds.
  - Ny sætning - en analog leser og en digital leser
  - Netværk → eksklusiv samarbejds patent → digitalt (Roland som eksempel)
- Partnerskaber

Reference: Part 1 / Part 2 / Part 3 in the vision

Fælles funktion → Hvad er det nye? teknisk betydning.

Goal: Opening up the workshop facilities

Possible Strategy:

~~Værksted for~~ ~~offentligt~~ Salam tilføjer ikke noget nyt!  
Salam → frivilligt eller en integreret del af et undersøgningsforløb  
Uden ECTS er det problematisk, "Workshop"

Reference: Part 1 / Part 2 / Part 3 in the vision

Goal: Funders ansøgning

Possible Strategy:

Støt nu! dyk funder og få dem med til at funder hvad de vil støtte!  
Hvornår

Reference: Part 1 / Part 2 / Part 3 in the vision

Goal: Engaging an strengthening of teaching

Pædagogik →

Possible Strategy:

- Godt eksempel med Ekspert, Møde, kursus → Undervisning
- Flere muligheder - fx Møder på KA
- Det store her er, pædagogisk udfordring i at LAB har kompetence til at udføre undervisning. (faste, undervisning, Værktøjer)
- Styrke samarbejde, Undervisningsplanlægning

Reference: Part 1 / Part 2 / Part 3 in the vision

konkret  
 ulempe:  
 støjsgener

fordele:  
 stort rum til flere  
 aktiviteter

Indeholder:

- 100 & 100 (to gode arkitektudbydere)
- Overdækning og to mellem korridorer
- Entreen
- 400 m<sup>2</sup> i alt

✓ overbevisning

Anden, Anette, Mads

Goal: Atgængelg. the spatial organization

085/11

Possible Strategy:

Ansættelse: - Hvor kan vi bedst samle flest mulige aktuelle faciliteter.

- mere pragmatisk
- nedlæg ikke kantinen (studietilgængelig)
- Måske lab skal være en del af bygningen
- Myten i holdskovene!
- Værktøjer/Lab synes på Campus
- Konstruktion af studieplaner, fælles + vækst (superfunktionslab)

Reference: Part 1 / Part 2 / Part 3 in the vision

VI skal have overordnet 155/160

160 → Byggesene skal ud at undersøges nærmere!

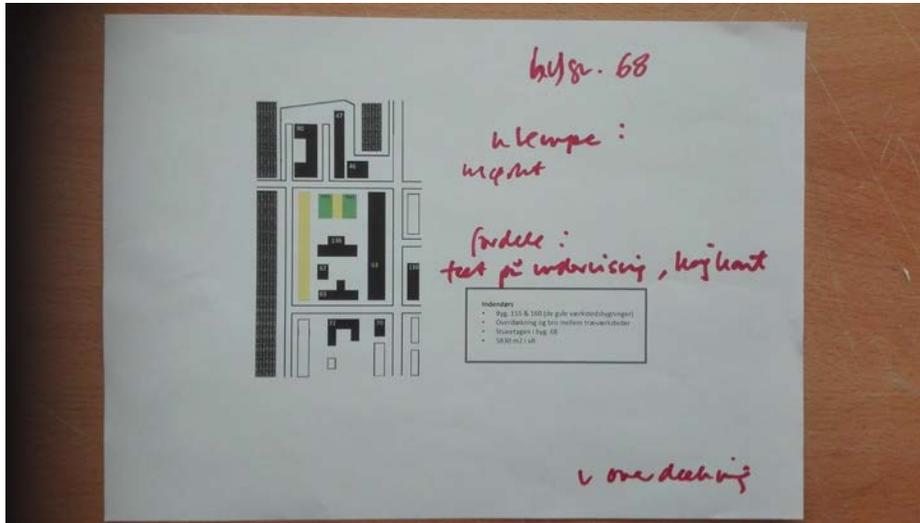
uholdbar

Same som kantine.

Indeholder:

- 100 & 100 (to gode arkitektudbydere)
- Overdækning og to mellem korridorer
- Udfordring
- 423 m<sup>2</sup> i alt

✓ overbevisning



Goal: Identity Building & Shared Resources

Strategy: Strengthening networks through strategic collaborations

Unfolding Question: Who? How? Why?

Reference: Part 3 in the vision

BLOCK HUBS

Goal: Atligning the spatial org. of work: LAB to the Vision.

Possible Strategy: Flexibilitet arbejdsplads / workshop / værksted

Skæve hold  
 = nok m<sup>2</sup> på  
 værkstederne!

Tilpassing til undervisningsformater  
 undervisningsmetoder  
 værdsætter relationer

medbring / koordinering mellem undervisere

Reference: Part 1 / Part 2 / Part 3 in the vision

Goal: Identity Building & Shared Resources

Possible Strategy: strengthenig networks through collaborations

Why: adgang til værktøj + KADK forstyrrelse  
 'køber-køber' chat

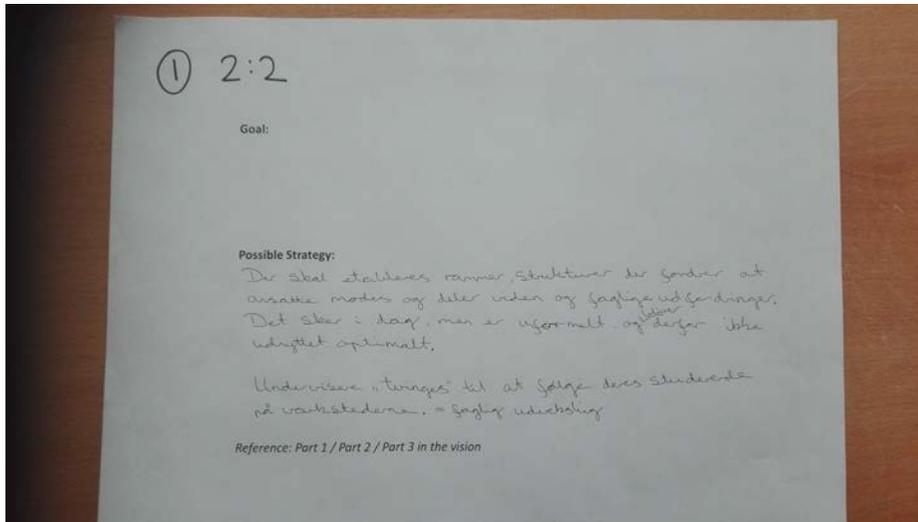
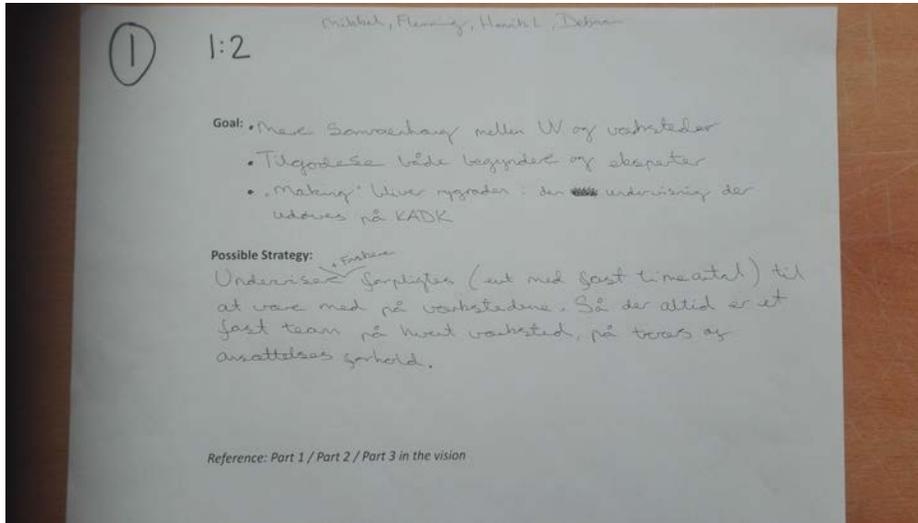
Who:

a) Kollagerig elastiske samarbejdsrelationer  
 - u identitet - hvad har vi?  
 - hvad vil vi gøre her?  
 - hvordan giver det mening at skabe samarbejde?

b) "Block Hub" fbs:  
 → Hvor kan studenterne få adgang til?  
 + etablere kontakt tilbage til KADK.

c) Database

Reference: Part 1 / Part 2 / Part 3 in the vision



### Three workshops with representatives from each school: Architecture, Design and Conservation respectively.

The overall aim of each workshop was to discuss and reflect on what already works very well at the school in question, and what is wanted needed in connection to a future realization of KADK: LAB.

#### Workshop with representatives from School of Architecture:

Summary from the workshop at the Architecture School of KADK: LAB Vision 09/11/2017

Participants: Jakob Brandtberg Knudsen, Mathilde Aggebo, Phil Ayres, Flemming Tvede Hansen, Marianne Schrøder, Arne Høi, Natalie Mossin, Irene Lønne, Anders Abraham, Paul Nicholas, Frederik Seehusen, Jacob S. Bang

*What works well at the Architecture School today, which must be maintained in connection with a future realization of KADK: LAB:*

Light lab. It could be used more for teaching and research and also externally.

Project-oriented teaching and drawing boards e.g. a permanent study for each student

That the programs control the LAB and not vice versa

That there is a lot of production - in the workshops

That there are decentralized elements, for example 3d printers

That there is a certain flow across schools

Model workshop

The wooden workshop

That we can afford it!

That the program should be able to decide to invest in e.g. 3d printers ie have an autonomy.

That the students take responsibility for the central "gear" - with support.

## What we have is good but too small

*What do we want for the School of Architecture in connection with a future realization of KADK: LAB:*

That there is no production "in spite of" - of lack of space

That things can be produced even though it is dirty and require space

That there is a strategy for what can be produced at the programs

Priority for researchers at the workshops or at least some kind of hierarchy of who may use what compared to students, teachers, researchers and external

The wishes and needs of researchers are taken into account when planning re-establish the key workshop, with space for storage of models

That the researchers can have things standing at the workshop for a period of time

One question is whether others from outside should be able to have a "residency" (see above) in workshops?

Workshop for researchers, - and offices. Possibly, a flexible large room delimited from the students

Think collaboration, - to get a significant, high funding

Being able to produce 1: 1 prototypes that can give external visibility

Balance between the central and the decentralized

That there can be both research and production in LAB (good experience from SuperFormLab)

And .. that the workshop managers are there for the students and are teachers in craftsmanship. However, this will require them to have more time  
What does external require?

An educational didactic vision must be in place

There must be more space at the workshops. Priority should be given to space rather than advanced equipment. There must be more focus on the materiality.

Workshops and existing "low-tech" facilities should be improved.

*Elements needed in an action for the future KADK: LAB:*

A funding track over time

How big can we think? Can we think of a new building outside campus ...?

That some scenarios with consequences are described so that, if necessary, priority can be given

Should funds be transferred from KA to KD as KA students use KD's workshops, in particular print and photo?

That it is clear what is the minimum budget

Overview of what we have today that could belong to KADK: LAB

Ask the "aftagerpanelet/aftagere" what their point of views are on KADK: LAB and the vision.

Consider what we have together (for example, listen to measuring equipment?)

To discuss whether AR and VR (augmented, virtual reality) should be included in KADK: LAB

A didactic vision must be incorporated into the vision for KADK: LAB and be a part of the "Action Plan"

In the vision, it must be clearer that there must be a balance between the new and the existing, and that the basic facilities need to be improved... so the new and the technological not is weighted so much. One aspect does not exclude the other.

## Workshop with representatives from School of Design:

Summary from the workshop at the Design School about KADK: LAB vision  
14/11/2017

Participant: Irene Alma Lønne, Mathilde Aggebo, Tine Kjølsten, Malene Kristiansen...

*What works well at Designskolen today, which must be maintained in connection with the establishment of KADK: LAB?*

That education comes before research

That the workshops are affiliated with the teaching environment - but it could be a more dynamic approach

There is strong integration between the workshop and the teacher.

Collaboration, when teachers are teaching at the workshops and have the opportunity to get help from the workshop staff.

Decisions on new equipment are taken in collaboration between workshop staff and teachers

*What do we want at the School of Design in connection with the establishment of KADK: LAB?*

Some principles / hierarchy for the use of works and LABs, and in relation to what is taught and where

There must be opportunities for residencies in the workshops

There must be a space to work with projects - across labs. It should be for research, but you should also be able to bring students. It will be clever with a wagon, where you can have your own things you can pick up and drive around.

KADK: LAB may need to be structured differently than we do today in:

o Digital media lab

o Materials

o 3D LAB - also for print, wood, concrete, etc.

o Incubator unit

The risk is that we build new silos, the advantage is that we have fewer units than today, and work more across

In general, we must strive to go more across - and exploit synergies - an example is clothing / textile that is interesting (already) for others eg. architects. There need to be some "in between spaces". How should it be organized on the basis of some principles and how. Is it managed in practice? It should be possible to have events with external partners in KADK: LAB eg. hackathon / case competition

A new KADK: LAB will influence the u-plans - it should be considered.

It must be ensured that we have the teaching capacity

Workshop facilities or study places? Should each student have a permanent study place or could we have a more generic study space arrangement?

Keep in mind that the economy of the institutes changes when the economy is changed to KADK: LAB

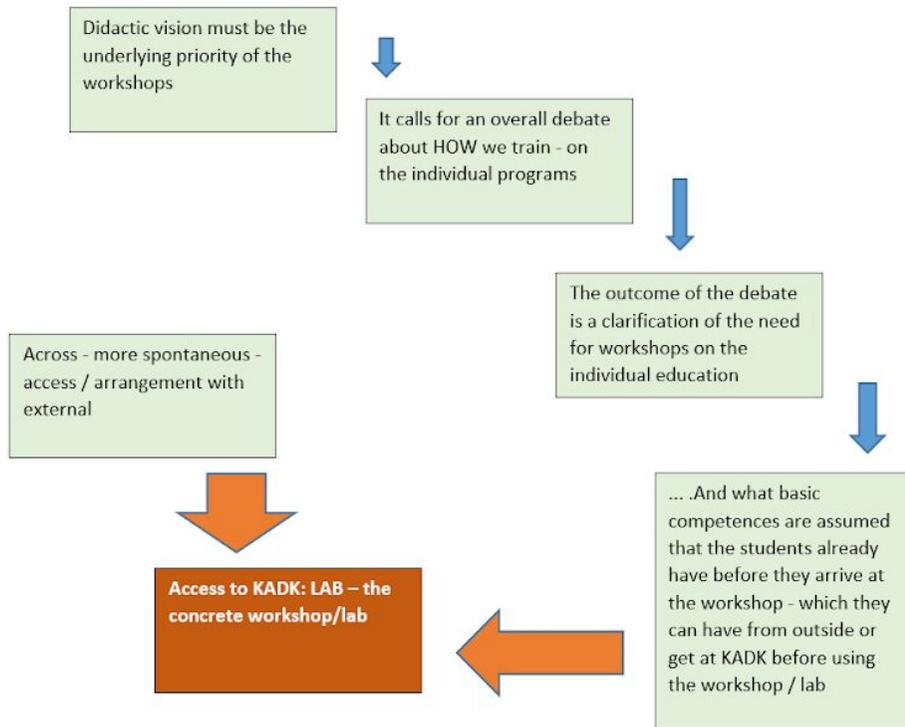
The visions for KADK: LAB leader must be clearer

Major research projects could identify funding for new skills and gear

KADK: LAB demands that we find a way to handle the students' demand for "hybrid competences". There is already pressure from architects. Who decides when a student is offered a specific competence? It must be put into system.

The students should be able to understand what they are entitled to and what workshops they are offered during their study. Already today, priority to workshops is a big issue.

A coherent process for clarifying the access to KADK:LAB is needed:



### Workshop with representatives from School of Conservation:

Summary from the workshop at the School of Conservation about KADK: LAB vision. 6.11.2017

Participants: Mikkel Scharff, Cecil Krarup Andersen, Ingelise Nielsen, Jettie van Lanschot, Dorte V. P. Sommer, Flemming Tvede Hansen, Marianne Schrøder and Heidi Bergstedt

Feedback on the presentation of KADK: LAB Vision:

#### *The special about KK:*

Research and science are at the center of KK - and here is the "three-legged" basis, which the rest of KADK is based on, not a part of everyday life, because KUV is not practiced at KK

*The researchers are at the center of KK*

The teaching in the basic techniques is the beginning for everyone - or it is expected that the students have some basic knowledge e.g. in chemistry when they start.

*The purpose of the laboratories is for analysing - and not for creative research*

The teaching is based on others or own research

#### *The common for KK, KA and KD:*

We all work with materials

Are skilled craftsmen - also in relation to equipment

Have a theoretical background

What KK can contribute to KADK is material knowledge - in depth - with an analytical approach.

At the meeting it was repeatedly stated that the close collaboration between workshops / labs and research that is stated in the vision, already takes place at KK to a far greater extent than at the two other schools. It was also repeatedly mentioned that KK not perform artistic development, but has a scientific approach to the work at workshops and laboratories. At KK the work in the workshops is analytical and not creative and practice comes from research, but the three schools can meet in the work with materials and crafts.

*What works well at School for Conservation today, which must be maintained in connection with a relocation at Holmen?*

The individual employee is both a researcher, an operator (of equipment) and a craftsman in one. It will be good with some help to maintain - on the operator side

Apparatus must be part of the professional environment

The security must be present as today for lent of art objects

There must be climate and light protection as today

There are building requirements that must be met with regard to safety at the chemistry lab (eg in relation to shaking, magnetism, climate)

The current types of equipment (microscopes, etc.), as found today, must be maintained. Some can be moved, some has to be retransmitted

Lead in the walls around the X-ray room

In the economic planning, there is a need for resources for reinvestments and maintenance. There must be a real reinvestment budget and a plan for how to reinvest.

There must be exhaustion and spouts - either by moving existing ones or by reinvestments.

It must be possible to continue teaching in the labs. The 5 departments at KK are specific because of the materials treated at the lines and their laboratories can not just be put together.

The school serves as a collection of labs - there are only a few classrooms. It must continue to be so.

The proximity between laboratories and photo lab must be ensured - transport of secured items can be demanding. Due to the required security in relation to lent museums objects the KD's photo lab can not replace KK's photo lab.

All rooms are secured and key delivery is strictly controlled. It must continue to be so.

The school is closed between 8pm and 7am, with an alarm. It should continue to work like this.

There must be additional space in secured rooms for the storage of works of art. These must also be burglary and climate proof.

Sufficient storage facilities must be ensured. There is now a lot of "hidden" storage space in the many stairwells

*What do we want at the School of Conservation in connection to the relocation at Holmen?*

That architect and design students get access to some of KK's labs and get training in the use so they do not show up without competencies or unannounced. Dedicated time and relevant staff have to be considered for the purpose.

That KK's students have access to 3D print and to e.g. sand casting, the wood and metal workshop at Holmen, to gain a touch and feel for materials and how objects are produced - focusing on technology / manufacturing method. To allocate resources for cross-disciplinary teaching and projects.

Teachers at KA and KD are prepared to meet students - and thus assignments at the laboratories at the school for Conservation. A process must be established to make clear agreements, so the student meets prepared with a precise description of the assignment.

There must be physical space in the lab's for the student to have projects running - and research projects over a period of time as well.

A wood-workshop with special tools from the School of Conservation.

That the 5 departments of KK are gathered in one building together in close relation to laboratories - eg. one at each floor. This is important since it is a small academic environment. Offices for teachers can be in one corridor. That staff meet more often in the daily working hours.

To have some common labs with KA and KD - eg. for material testing (and time machine). Climate control is required here.

A common eating / coffee room - very well joint with KA and KD employees

Physical material testing equipment should be boosted

Monumental art and restoration can have fruitful interactions

Common cross-disciplinary education, for example about materials.

Knowledge and professionalism from the School of Conservation can lift some of the projects by students at KA and KD eg. Fish Skin project.

It should be easier to find out what is happening at the other schools and what taught and who has what skills (see KK website)

If KK are supposed to offer knowledge to other programs, it is important that there is resources for it and it is planned regarding the right teachers.

that KK's equipment must be at the highest level in order to be part of EU collaborations. However, it is also necessary to maintain networks so that equipment can be borrowed around the world

That some students from other programs receive the scientific method as one part of their foundation.

That the possibilities that KK accommodates for students, researchers and teachers at other programs are known for KA and KD. Then it also becomes easier to talk together at "the labor market".

Collaborations with KA and KD regarding teaching will primarily be seminars since the course at KK only will be repeated every third year.

*How do we proceed from here?*

The next step is that the vision is qualified by input from the 3 (Schools-) workshops, so the 3 schools identify themselves in a common vision. This vision is to be presented to the Board.

Feedback on KK's vision is received at the follow-up meeting at KK on 17 November.

The vision is the basis for a common strategy.

Based on the material, the workshop at KK - and the workshops at KA and KD - the writing group comes up with a suggestion for an action plan.

Appendix:

Based on the workshop with representatives from the School of Conservation a paper from the representatives was developed with clarifying comments:

KADK: Lab - Comments from meeting 20171116, ver. 2

Cecil, Ingelise, Jettie, Dorte, Mikkel

Comments from the writing group:

The four pages about the KADK: Lab vision were reviewed and commented by the representatives from the School of Conservation. In addition the need for School of Conservation in connection to the relocation at Holmen were further clarified. Additions and comments were added and taken into consideration by the writing group. A version with the edits of the vision where the corrections are incorporated has been fulfilled in the best way according to the remarks.

**Workshop at the status meeting 17 December 2017 for all development projects at KADK**

The workshop was centered around two overall questions which was divided between the participants for discussion in groups.

Question 1:

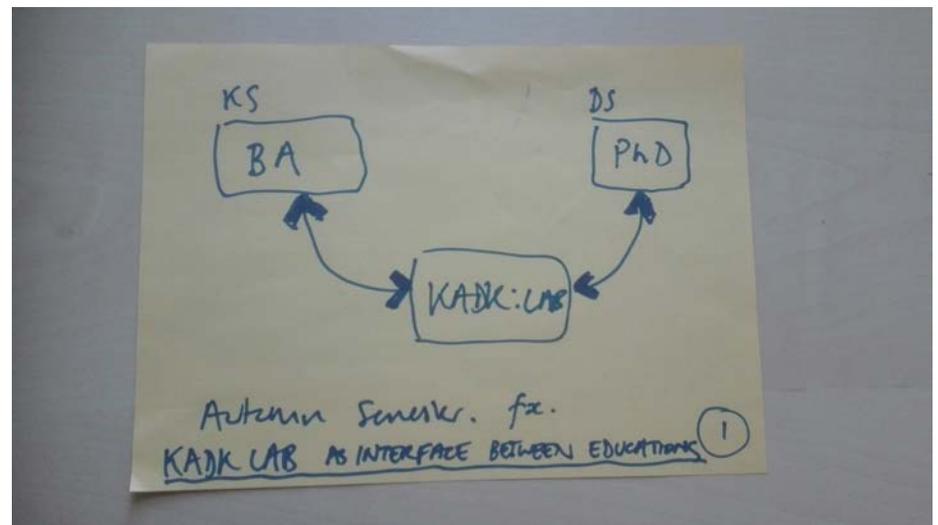
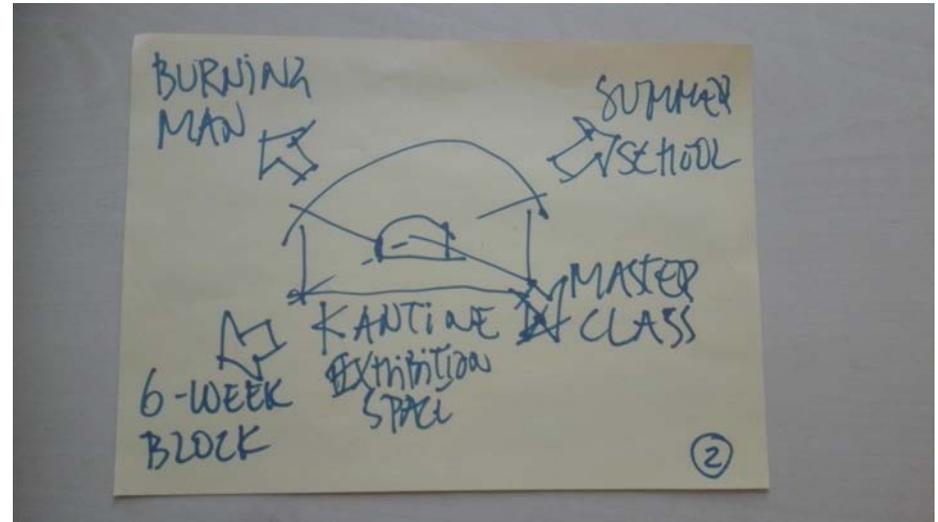
What models of interface can we establish between KADK:LAB and Study Programmes (BA/MA/PhD) to support and advance education?

Question 2:

What models of interface can we establish between KADK:LAB and Research/KUV entities (individual researchers/units/centres/etc.) to support and advance knowledge creation?

The questions were discussed and diagrams with keywords and comments were developed in the groups:

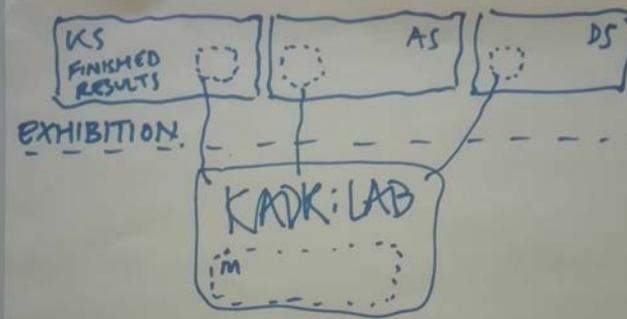
Posters produced based on question 1:



STUDY PROGRAMME  
'RESIDENCIES'  
WITHIN KADK:LAB.



③



INCREASING VISIBILITY ⑤

KADK:LAB  
EXPERT  
POOL



AS/KS/DS  
CRITS.

④

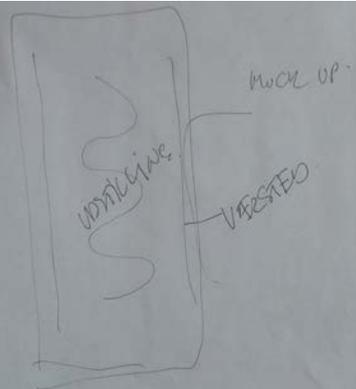
MARIA STARRÉ PETERSEN  
msp@kadk.dk

- DEN ENKELTE STUD. SKAL OPLEVE
  - PDG. TIL FLERE VÆRKSTEDER/EXPERAR (TAREAL)
- PLANLÆGNING
- VALGFRI KURSER
- INDRETNING
- STYR PÅ PROGRESSION I UNDERVISNING HVAD ANSAR FORSKERE/UNDRISERE OG VÆRKSLEDERE
- DIALOG

OBLIGATORISK 'TOUR DES  
CHAMBRES'

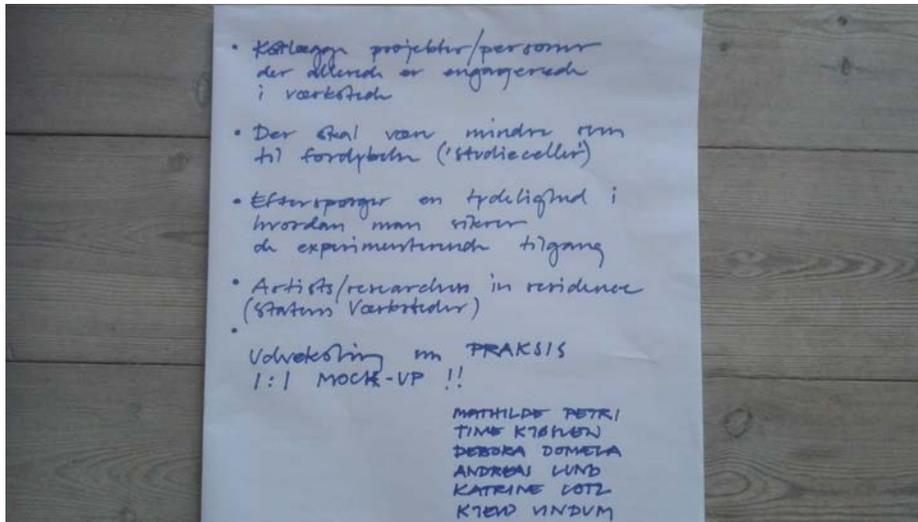
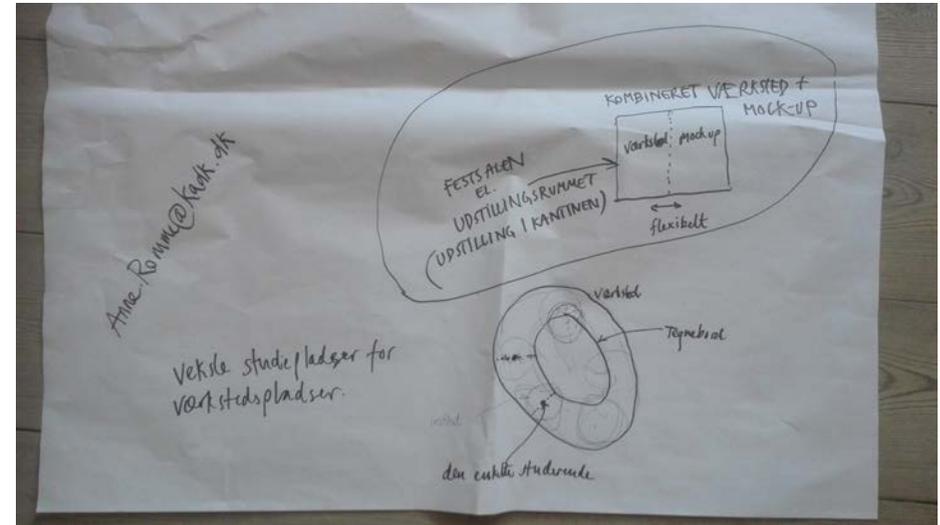
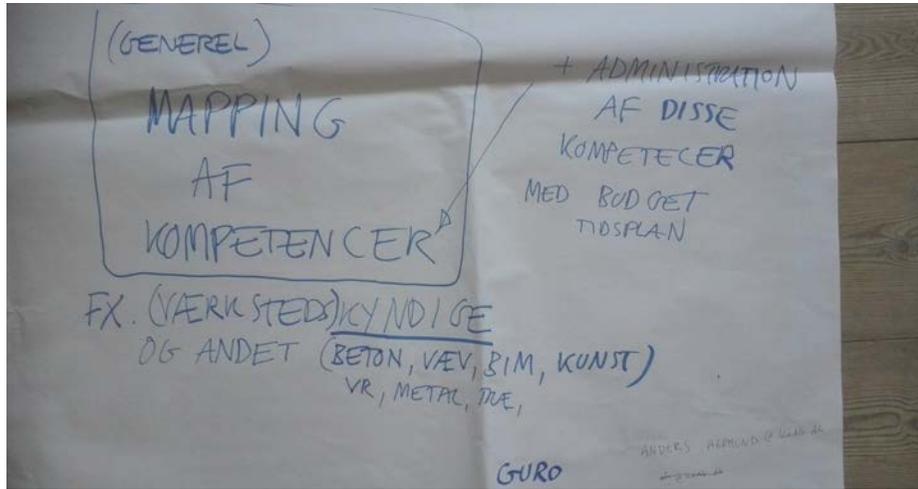
BÅDE AVANCERET MEN  
OGSÅ BREDT.

SVINEVERKSTED SAVNES!  
1:1 VERKSTED +



JAS.  
JS @ K42. DK.

Posters produced based on question 2:



## A workshop with students from the three schools: Architecture, Design and Conservation representing BA, MA and PhD level.

The workshop was centered around an overall question and discussed with the 6 participants facilitated by the writing group.

Question: How can KADK:LAB be most productively interfaced with Study Programmes and Research/KUV to support their advancement?

Summary:

KADK: LAB vision - Discussed by 6 selected students January 11, 2018

- It should be included in the curriculum of the program what to learn about workshops on the programs, so that students are introduced to the possibilities so that you can imagine what is possible.
- Crossover activities must be advertised easily accessible to use a shared facility like KADK: LAB available to students
- Both the green and the highly qualified skilled students must be able to be accommodated at KADK:LAB- reference Super Form Lab
- The School of Conservation has methodological knowledge relevant to other programs - Reference Cita
- Management of resources: If more is offered, there may be a need to minimize participation in the single offers. One way to deal with it is that there are student tutors that help keeping the workshops open.
- Encouraging that more people are having courses together and are presenting projects for other students. This opens up for collaborations and opportunities that make sense. It makes more sense than being separately accommodated. Opportunities for meeting - in an example, a monthly open house - will allow for this. It's exciting to think about how little we really need to allow these relationships to be found. You learn a lot from collaborating across programs when it is driven by one's own professional interest

- The "chance" to meet new people in a laboratory can provide more knowledge exchange.
- The School for Conservation is very small and there is a risk that the material competences that you need is not found, e.g. with regards to plastic and glass. A larger lab will allow all the skills and knowledge you need to be found - a place where you can draw on KADK's competencies.
- Restrictions on museum objects can make up a barrier in a larger context
- Can one imagine that The School of Conservation works with materials from other areas of KADK - and not just museum objects? Other materials may be relevant to the teaching at the School of Conservation.
- The skills / methodologies eg. Woodcutting which The School of Conservation now pick up elsewhere (because they have been cut away at the School of Conservation) may be held at the future KADK: LAB and benefit from that.
- The one day conference as the "2017 Research Conference" is inspiring - you visit other places at KADK.
- One idea is small two-hour courses that introduce you to different tools, and that you obtain a card/ you get a stamp - or something - that demonstrates the competence of a given machine.
- Let the more accessible differences in a lab inspire new ways. It is the student's responsibility to specialize - also taking internships, can ensure the specialization.
- That a KADK: LAB has external contacts can also benefit more and create opportunities
- The student takes responsibility for specializing, - in return KADK:LAB takes responsibility for showing where there are links between skills / competencies
- Providing optional subjects with students from different schools is a way...
- It is difficult for the individual student to find people with the special knowledge that you may need in collaborations... across schools. There is a need to find people.

- That PhDs present their projects for students are also interesting for both parties.
- At the master at the School of Conservation there is great freedom to choose own specialisation - and here the possibilities of a KADK: LAB will help to find their own specialisation. You choose a subject at the first year and work on your own project both years. It determines both theory and practice for two years. You must have your own individual plan when you start your master.
- As a Phd, there is not necessarily so much freedom. Much is dictated by project briefs and partners. KADK: LAB could bring new things into a project.
- At The School for Design there is great freedom all the way, also at the BA.
- KADK: LAB is seen as a good supplement for The School of Conservation's core-laboratories, which are specific to The School of Conservation.

## **Visits to other organisations/institutions**

Over the course of our work we have had opportunity to visit a number of external academic or industry workshop/lab facilities. These visits have provided valuable insights for the report.

In this section we present key findings/notes related to each visit conducted. The choice of the visits was largely determined by opportunity related to other teaching/research activities. Nevertheless, the collection of facilities visited bear a strong relevance to the broad range represented at KADK and the development ambitions of KADK:LAB.

The visited facilities were:

1. **Arch\_Tec\_Lab Building, ETH Zurich**
2. **IAAC, Barcelona**
3. **Autodesk Build Space, Boston**
4. **The Bartlett, UCL, London (B-Made & Here East)**
5. **RCA, London (Battersea campus + Kensington Gore campus)**
6. **KHiO, Oslo**
7. **ADDLAB, Aalto University, Helsinki**

## Arch\_Tec\_Lab Building

Visit Date: 01.12.2016

KADK:LAB Representatives: PA

Affiliation:

*Institute of Technology in Architecture (ITA), ETH Zurich*

Role:

*Academic: Teaching, Research, Extended networks/collaboration*

Notes:

- Large scale gantry setup supporting 6 robot arms that can work collaboratively within the 45x17x6m build volume.
- Space supports full-scale mock-up of construction experiments.
- Envisaged as a platform for open use across disciplines interested in spatial applications dependent on digital control.
- Support spaces for teaching, data preparation, material storage, maintenance, etc are directly adjoining.
- Expert use only.
- High visibility - powerful communication.
- Hosts high impact projects that are broadly disseminated.
- High flexibility.
- Clinical atmosphere - access heavily controlled.



*ETH Zurich*

## IAAC Barcelona

Visit Date: 05.06.2017

KADK:LAB Representatives: PA

Affiliation:

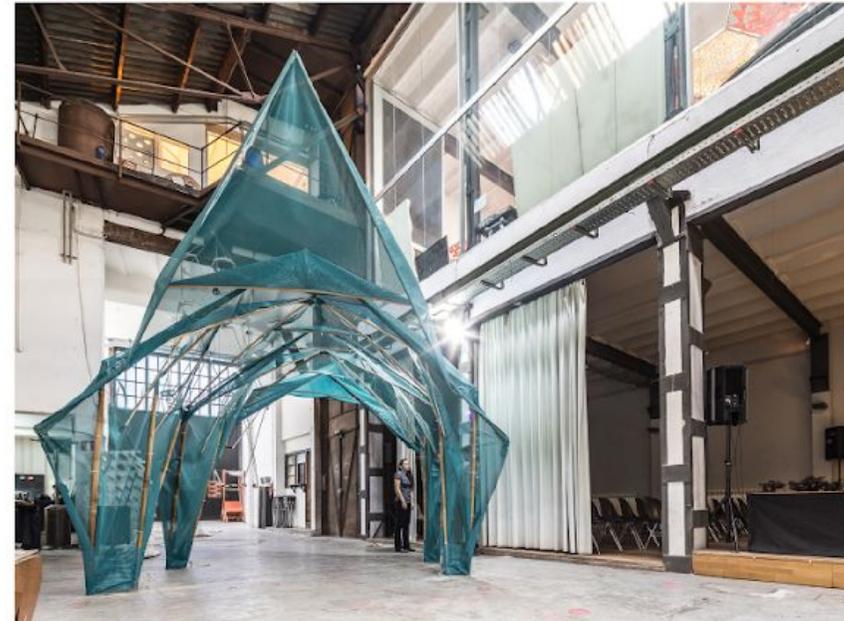
*Institute for Advanced Architecture of Catalonia, Barcelona*

Role:

*Academic: Teaching, Research, Extended networks/collaboration*

Notes:

- School occupies a large warehouse. This is spatially organised around a large open room running full length and with flexible divisions. The large space can hold multiple temporary programmes at the front, with fixed programmes (robot cell, CNC, etc at the back).
- Smaller auxiliary spaces are directly adjoining and some can fully open up to the larger space.
- Some auxiliary spaces host permanent programme, e.g FABLAB.
- Has a very charged atmosphere - permanent exhibition of past work lining the walls, space is constantly occupied with people and stuff.
- Opens directly onto the street - good in principle, but has security issues.



*IAAC, Barcelona*

## Autodesk Build Space

Visit Date: 02.11.2017

KADK:LAB Representatives: PA

Affiliation:

*Autodesk, Boston*

Role:

*Business: Research and Development, Innovation Incubator*

Notes:

- Large open mock-up space supported by peripheral specialist spaces with a broad range of dedicated tooling.
- Spaces for hosting start-ups with particular manufacturing/production needs.
- Vertical space connects floors - high flexibility.
- Flexible partitioning for temporary work cells.
- 'Shop front' gives public exposure.
- Business model - long term investment, not directly profit making
- Big investment to support production of composite products - fibre wound and mat based (see right hand row of images, next page).
- Projects an atmosphere that anything can be made.





*Autodesk 'Build-Space', Boston*

## Here East + B-Made

Visit Date: 16-17.11.2017

KADK:LAB Representatives: PA, FTH

Affiliation:

*The Bartlett School of Architecture, UCL, London*

Role:

*Academic: Teaching, Research, Extended networks/collaboration*

Notes:

### 22 Gordon St. Site

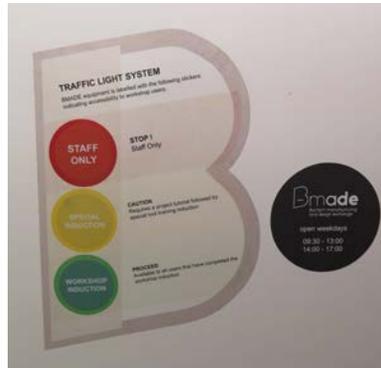
- Newly renovated building at 22 Gordon St. with full basement dedicated to workshop facilities.
- 13 workshop staff (w. teaching contracts) at the Gordon St. site alone.
- Expertise of staff embraces traditional + high technology.
- Dedicated Robotics lab with 10+ small > medium scale industrial arms
- Dedicated 'shop' for materials/consumables sales + loaning of equipment.
- Student cards indicate proficiencies gained
- Dedicated 3D print lab with fixed high-end multi-material printers and 'loanable' printers that can be taken away. Lab deals with maintenance of all equipment and materials stocks.
- Heightened Health & Safety awareness (no access without eye-protection throughout all workshop spaces).
- Very approachable atmosphere.

Here East Site could not be accessed due to test failure of the floor, but key notes from discussions:

- 20 year lease on 3000m<sup>2</sup> space in the former Olympic Park
- Large mock-up space for full scale assembly and experimentation
- Large raked auditorium for lectures w. 280 person capacity
- Houses 4 new Master's Programmes
- Dedicated studio spaces and individual research labs in close proximity to principle making/mock-up spaces.
- Aims to attract academic & industry collaboration/consultancy and cross-disciplinary research
- Located in an area with high concentration of innovation/start-up efforts.



B-Made Shop



B-Made robot cells, supervision labelling & 'drivers licence'



'Here East' campus visualisations, opening Jan 2018

## RCA (Battersea campus + Kensington Gore campus)

Visit Date: 17.11.2017

KADK:LAB Representatives: PA, FTH

Affiliation:

*Royal College of Art, London*

Role:

*Academic: Teaching, Research, Extended networks/collaboration*

Notes:

### Battersea Campus

- New building (Woo Building) with a site opposite about to be developed, providing 8 stories of dedicated facilities.
- Large-scale dedicated facilities for Ceramics, Print, Jewellery, Metalwork.
- High-visibility between facility/individual spaces - directly linked.
- Houses RCA Innovation, a start-up hub supporting selected graduates with space, access to facilities, fund raising expertise, etc.
- Close connection between workshop/lab facilities and study environment
- Professional atmosphere - building defined by practices contained.

### Kensington Gore Campus

- The original RCA multi story building adjacent to Hyde Park.
- Hybrid educations making use of traditionally differentiated workshops.

- Certain traditional workshop-based activities are now sub-contracted out, e.g clay model building of vehicles, reflecting changing priorities in education.
- Close connection between workshop/lab facilities and study environment
- Fragmented and self-contained atmosphere - practices fit to the building





## KHIO, Art and Craft

Visit Date: 24.03.2017

KADK:LAB Representatives: FTH

Affiliation:

*Oslo National Academy of the Arts/Kunsthøgskolen i Oslo (KHIO)*

Role:

*Teaching, Research, Extended networks/collaboration*

Notes:

- Large open mock-up space for full scale supported by peripheral specialist spaces with a broad range of dedicated tooling.
- Smaller auxiliary and workshop spaces are directly adjoining and some can fully open up to the larger space.
- Envisaged as a platform for experimentation and open use across disciplines.
- Space connects floors - high flexibility.
- Close connection between workshop/lab facilities and study environment
- Houses a range of study programmes
- approachable, creative and professional atmosphere



## AddLab

Visit Date: 21.01.2018

KADK:LAB Representatives: FTH

Affiliation:  
*ALTO University*

Role:  
*Research, Extended networks/collaboration, Teaching*

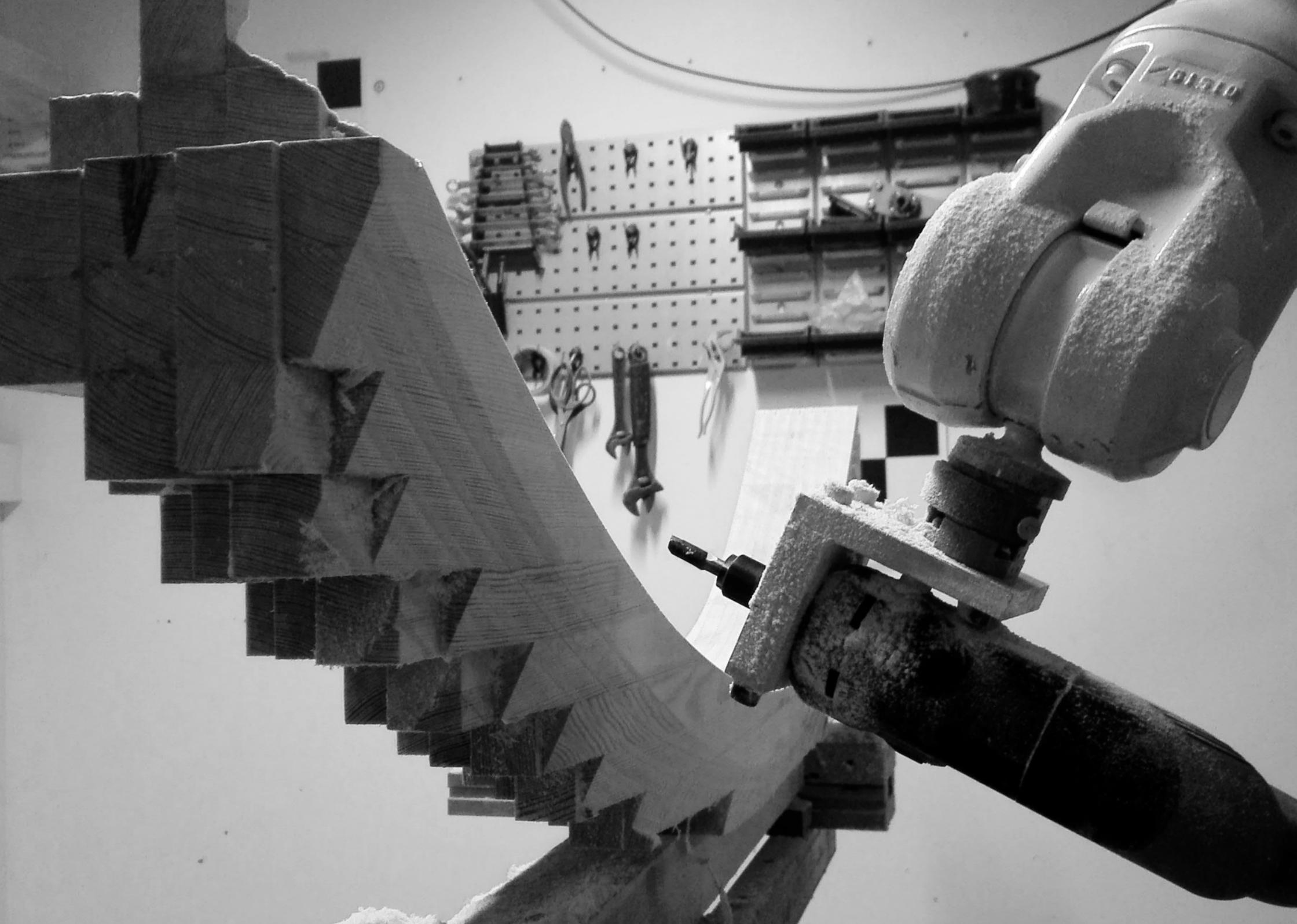
### Notes:

- Research based digital print and robotics laboratorium
- Special developed printers by researchers and master students.
- Dedicated 3D print and robotics lab with fixed high-end multi-material printers.
- Primary expert use only but support students as well
- Envisaged as a platform for across disciplines interested in digital tools, e.g. as a platform between engineering and design
- Professional atmosphere within high-technology









## 4. Vision Statement

By intersecting the data gathering work with the terms-of-reference (Kommissorium), and through a thorough consultation processes that has invited feedback from a full cross-section of KADK representatives, we have established the KADK:LAB vision. This vision targets three focus areas:

- Supporting and Advancing Research/KUV and Education with a focus on high technology
- Innovation in Practices
- Strategic Partnerships

In this section of the report we offer the vision statement, and then briefly unpack each of these to provide a broader context of reference that frames the strategy and scenario sections that follow.

## The KADK:LAB Vision Statement

*KADK:LAB will establish a scientifically and artistically grounded, critical and creative hub of leading expertise and facilities for supporting, nurturing and **advancing research and education** at the highest levels within KADK.*

*KADK:LAB will be at the forefront of **innovation** in relevant making and analytic practices, and will foster new and unconventional practices that anticipate pertinent futures of making and material investigation.*

*KADK:LAB will actively search to develop and strengthen **strategic partnerships** within and beyond KADK, looking towards academic, industry and professional practice communities, both domestically and internationally.*

## **Supporting and Advancing Research and Education through a Focus on High Technology**

KADK:LAB will establish a scientifically and artistically grounded, critical and creative hub of leading expertise and facilities for supporting, nurturing and advancing research and education at the highest levels within KADK.

KADK has set a goal that future graduates should have more technology understanding and competencies, and the capabilities to translate this knowledge into concrete solutions. Bachelors' technological skills must be in line with industry, and candidates must be able to lift the level in the industries.

Whilst KADK:LAB will place a focus on high-technology and the state-of-the-art, there is also a necessity to offer facilities and expertise in traditional methods and approaches for the following reasons:

### **Nurturing novices and experts.**

KADK:LAB will have a broad spectrum of users, from novices to experts. provide support to accommodate a broad range of user expertise.

### **Grounding.**

Many high-technologies have a direct lineage to traditional methods/tools, therefore a grounding in the preceding technologies will build strong conceptual, tacit and technical expertise enabling better transfer

## **Innovation of Practices**

KADK:LAB will be at the forefront of innovation in relevant making and analytic practices, and will foster new and unconventional practices that anticipate pertinent futures of investigation and making.

KADK:LAB must be "state-of-the-art" and an attractive meeting platform for KADK and our external partners. Being 'state-of-the-art' must combine advanced, innovative and unconventional thinking together with advanced facilities and high technologies. Through this combination (thinking and equipment) a strong platform for adding value to existing practices can be established. It will support:

### **Building upon tradition.**

Continued development of existing scientific methods (methodologies), craft and manufacture practices informed by changing knowledge and technologies, relevant societal and cultural trends.

### **Looking to the future.**

Fostering new and hybrid forms of making practice that advance design culture, reflecting emerging societal trends and practices within craft and manufacture.

In addition to the current suite of workshop/lab facilities, we recommend investment to establish facilities supporting investigation in current **mega-trend** focus areas:

- Interfacing with natural systems (f.x biology)
- Industrial and unconventional robotics
- New materials

New focus areas should be reviewed periodically to examine their impact on teaching and Research/KUV and societal relevance.

## Strategic Partnerships

KADK:LAB will actively search to develop and strengthen strategic partnerships within and beyond KADK, looking towards academic, industry and professional practice communities, both domestically and internationally.

Strategic networks will be essential for KADK:LAB to **foster opportunity and promote exchange**.

KADK:LAB will develop such networks '**looking in**' (internal to KADK), '**looking out**' (external to KADK) and '**bridging**' (establishing opportunity for students and researchers to link to external parties).

### **Looking In (internal to KADK).**

Between workshops/labs and research entities (individual researchers/research units/research centres) Between workshops/labs and study programmes.

### **Looking Out (external, within DK & International).**

Focus on Academic, Industrial and Practice partnerships (f.x DTU, CATS, BloxHub, 3D Printhuset, Arco) Participating in global networks (f.x FabLab/FabCity, IPERION\_CH, ICOM-CC, IAQ)

### **Bridging.**

Networks connecting between internal and external, fostering a productive flow of expertise and resources across the KADK boundary.



## 5. Strategies for Achieving the Vision

In this section of the report, we articulate a range of strategies that define concrete courses of recommended action aimed towards achieving the high-level vision goals.

We identify 6 key areas to locate the strategies. These are:

1. *Interface with Research/KUV*
2. *Interface with Teaching*
3. *Space*
4. *Organisation*
5. *Identity*
6. *Budget and Funding*

Each area is introduced with some contextual background, considerations, issues and broad recommendations.

## 1. Interface with Research/KUV

Research and KUV are defining activities of KADK.

The obligation to produce new insight serves to benefit society in general, but more directly, serves to sustain teaching across KADK and contribute to its relevance.

Many forms of Research and KUV practice conducted at KADK are directly reliant upon workshop and lab facilities. If we accept that the production of new insight - stepping beyond the state-of-the-art - is facilitated by access to start-of-the-art facilities, then KADK:LAB must offer the cutting edge to support research success.

However, access to state-of-the-art technology is not, by itself, a guarantee of research excellence. In our interview results it was pointed out that state-of-the-art thinking should be a precursor to state-of-the-art technology. This brings into focus KADK's research base as a core resource.

We recommend that interfacing with Research/KUV is developed through:

1. Strengthening relations to existing Research/KUV entities (individuals, units, clusters, centers) so that KADK:LAB supports their activities
2. KADK:LAB engages in Research/KUV activities directly

## Strategies

**5.1.1** KADK:LAB actively searches and supports the 'scaling up' of pilot/incubator workshops/labs where Research/KUV value has been proven (e.g CITA robotics lab). **[1,2]**

**5.1.2** KADK:LAB is given resources to foster, broker and host pilot cross-disciplinary projects occurring across workshops/labs. This could be extended with the establishing of cross-institution projects. **[2,3]**

**5.1.3** Embedded Postdoc and PhD's. KADK:LAB is given resources to set up Postdoc and PhD positions. The post-docs would be responsible for developing/continuing a project in their particular context (directly transferring cutting edge insights directly into workshops/labs), and PhD's establishing relevant projects. High technology focused Industry linked projects should be targeted. High impact dissemination should be a demand of all positions, and should also interfacing with teaching. **[1,2]**

**5.1.4** Promoting exchange and discourse. KADK:LAB will organise and host regular practice-based research seminars the intersect KADK:LAB experts (TAP & VIP) with external industry and practice. **[2,3]**

**5.1.5** KADK:LAB includes Research/KUV active staff actively engaged in applying for funded projects. These should be **[1,2]**

**5.1.6** Strategic development meetings between Research/KUV, Research administration and KADK:LAB staff. Meetings organised once per semester to discuss key development and investment areas, planning and scheduling of Research/KUV project needs, emerging trends, areas of improvement, etc. **[1,2,3]**

## 2. Interface with Teaching

Teaching is a core activity of KADK and intersects with workshops/labs in a rich and complex variety of ways, reflecting KADK's diversity of educations.

KADK:LAB will establish an active and close interface with teaching at all levels within KADK - including Undergraduate, Masters, PhD. We also recommend extending into Post-Professional teaching as a means of seeding new collaborations, fostering extended networks and generating new income streams (see 5.6.7).

We recommend that interfacing with Teaching is developed through:

1. Strengthening relations to existing Teaching entities (study programmes, courses) so that KADK:LAB supports their activities
2. KADK:LAB engages in Teaching activities directly

## Strategies

**5.2.1** Embedding of teaching within KADK:Lab with the aim of strengthening technological competencies in a design-led context. By establishing a trans-disciplinary masters, accessible to students from any of the existing educations, a common focus on high-technology (computationally led) can be taught and explored in the context of their specific discipline. This would promote exchange between disciplines, establish new peer-groups and possibly foster new approaches that could feed research. [1,2]

**5.2.2** KADK:LAB hosts and collaborates in the preparation of the undergraduate 6 week block course. Where appropriate, the courses operate across selected workshops to introduce basic competencies, foster curiosity and promote a sense of open-access. [1,3]



Material, Experiment, Technology - existing 6 week block course

**5.2.3** Elective and Advanced Elective courses should be established as a mechanism for managing the ideal of 'access open to all'. A rotating variety

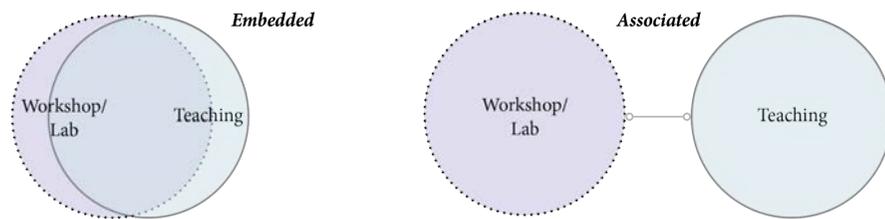
of courses in particular workshop/lab practices are offered on a semester basis and require signing up. Limited space courses are open to all - students and staff. Content of the elective should be developed between an active researcher and workshop/lab staff. A 'drivers licence' in that practice is given on completion of the course, allowing subsequent monitored access. **[2,3]**

**5.2.4** PhD Courses. KADK:LAB offers/hosts courses within the PhD school that intersect theory with practice and are led by newly appointed academic staff and/or related researchers from Institutes. **[1,2]**

**5.2.5** Strategic development meetings between Teaching and KADK:LAB staff. Meetings organised once per semester to discuss key development and investment areas, planning and scheduling of Teaching needs, emerging trends, areas of improvement, etc. **[1,2,3]**

### 3. Space

At KADK there are two principle spatial models defining the relationship between disciplines and workshop/lab spaces. For many disciplines, workshop/lab environments act as the primary locus of teaching (we term this relation ***embedded***). Examples include Fashion, Textile Design, Furniture Design, Ceramics, Conservation. For other disciplines, only certain aspects of practice may be reliant upon workshop/lab environments with teaching of core competencies occurring in other forms of environment such as studios (we term this relation ***associated***).



Maintaining this heterogeneity of space relations, whilst intersecting the ambition of ‘softening boundaries’ to promote exchange, and supporting the principle of ‘open access’, poses a spatial challenge.

The core of KADK:LAB should be defined by dedicated places of specialised and supervised production and experimentation, but these primary spaces must be supported with environmentally separated auxiliary flexible spaces (eg. acoustically/thermally/air quality) that allow for associated activities (e.g. meeting/preparation/instruction/lectures). We propose an ‘onion’ model to conceptually organise spaces around specialist expertise and supervised facilities at the core [#1], spaces that can be used after training (not

necessarily supervised) as an intermediate layer [#2], and open flexible spaces together with storage and material sales as a third layer [#3].

Decentralised satellite spaces [#4] that reflect specific programme/research/KUV requirements (e.g. Robotics, 3D printing, foam cutting, woodwork facilities) already exist across the campus. These should be supported and may draw upon specific KADK:LAB expertise, or seed developments/investment within KADK:LAB whilst remaining under local responsibility where preferred.

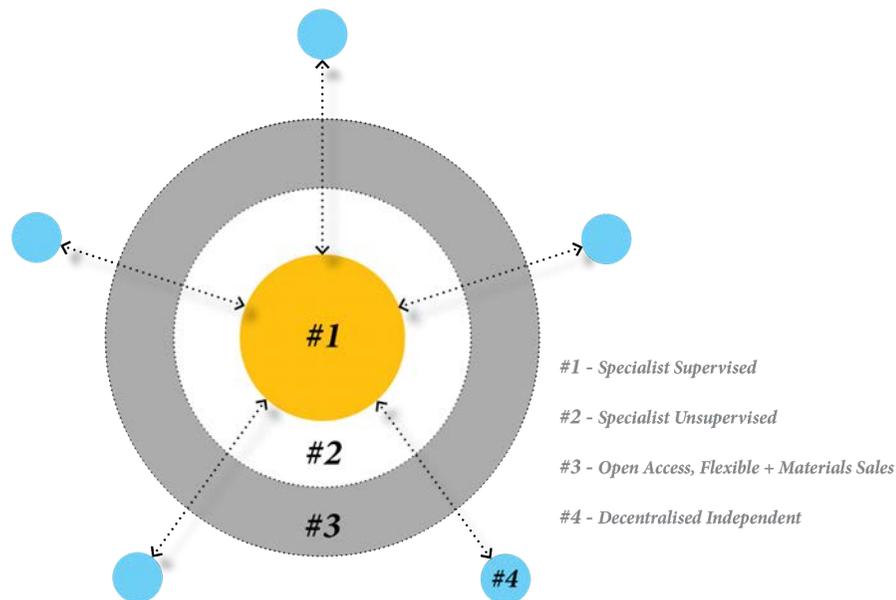
KADK:LAB will need to supplement both the square meterage of the workshop/lab spaces and existing modes of occupancy (embedded and associated), creating strategically located intermediary zones between particular workshops to promote expanded and cross-fertilised uses. Additional space is also required to accommodate the planned move of the Conservation School, and imminent move of SuperForm Lab. In addition, there is a repeated call for flexible mock/up spaces to support larger scale investigation and experimentation across teaching and research/KUV.

As such, we recommend a project to establish a stronger connection between the facilities contained in buildings 155/160 - covered, with bridges, floor plates and dedicated areas for material storage/sales at ground level. We also recommend the appropriation of building 90 to provide the required additional space and to establish dedicated facilities with high-technology focus together with flexible internal mock-up areas.

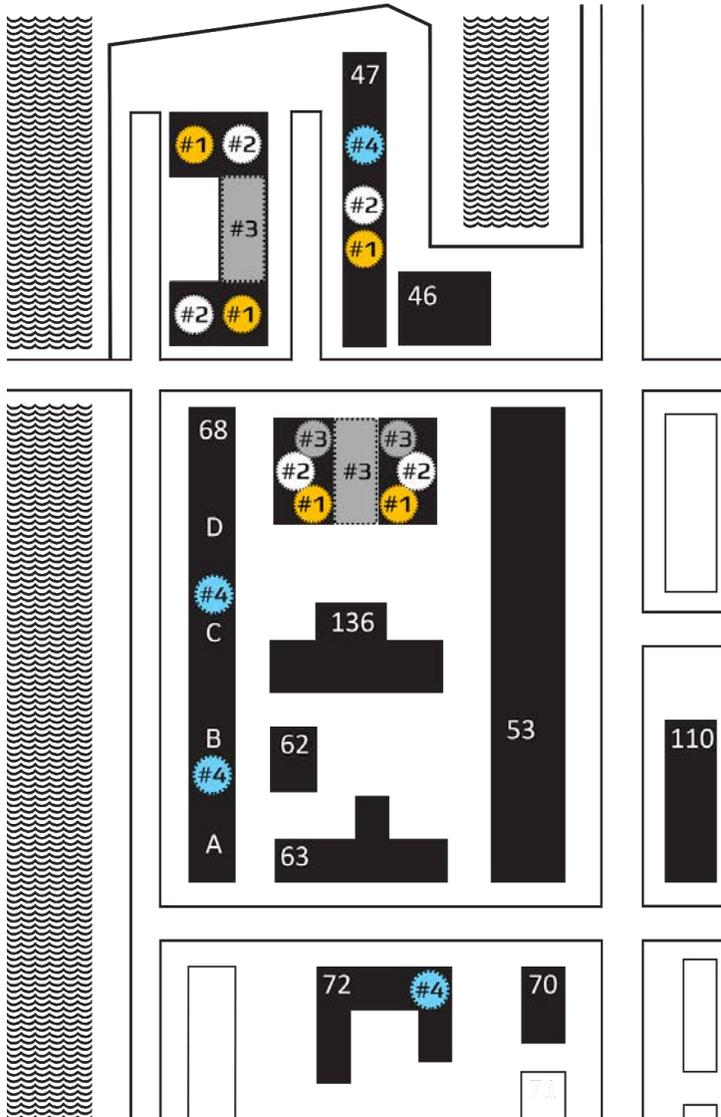
Many facilities require significant infrastructure in the form of power, lighting, ventilation or other specialised forms of environmental control. Buildings 155/160 have a heavy investment in these infrastructures so, where possible, these workshops should remain located, accepting certain consolidations.

The proposal to move the Conservation School to the Holmen campus will require a significant investment to establish dedicated, specialised and secure spaces. This report does not include an assessment of these workshop/lab requirements.

Material storage and movement between areas of processing has been identified as problematic in certain workshops (e.g. KAM) and should be resolved in the new KADK:LAB.

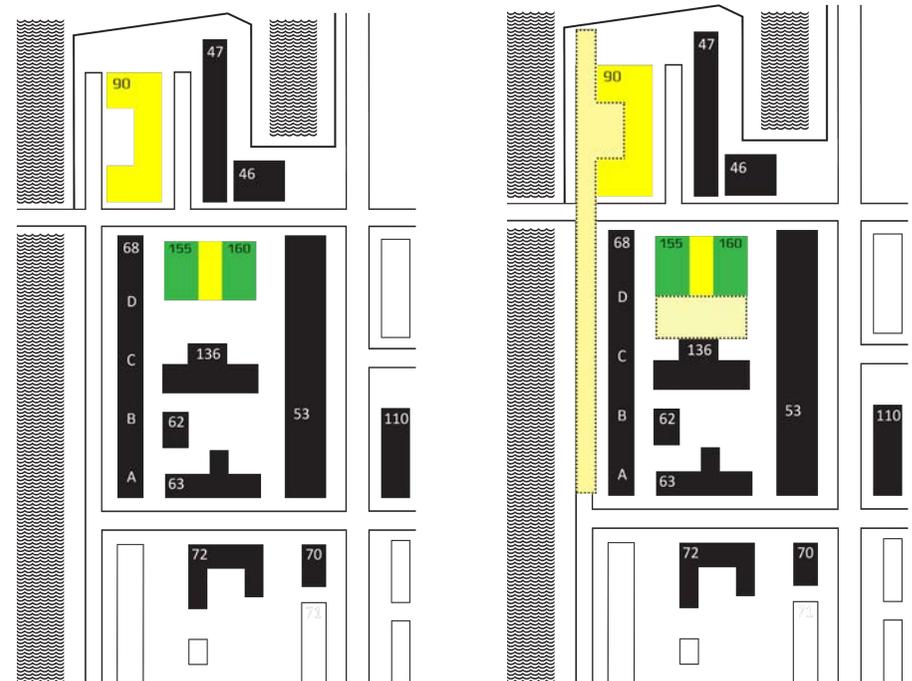


*Conceptual organisation of spaces as an 'onion' model (above) and suggested deployment on campus with concentrations of #1 - #3 spaces around buildings 155/160 and 90 (right).*



## Strategies

**5.3.1** New flexible ‘mock-up’ spaces for short/medium term project development/experiments/residencies by internal study programmes or external guests. Building 90 should be appropriated to create these extended facilities together with specialist workshops that will supplement buildings 155/160. [1]



*Recommended location of KADK:LAB within the campus. Building stock identified (left) with additional external spaces (right).*

**5.3.2** Maintaining buildings 155/160 & activating the space between with a new roof, decks, connecting bridges and ground floor plaza. All prior reports assessed in our work have made this recommendation. **[1]**

**5.3.3** Assess the feasibility of accommodating the School for Conservation in building 47 and the movement of current workshops and facilities (Print, Fashion, Photography, etc into Building 90. **[1,3]**

**5.3.4** Consolidation of metal and wood workshops across to create common facilities for KADK. This is already under planning with the metal workshops in order to create space for SuperForm Lab. **[1,3]**

**5.3.5** SuperForm Lab to be moved to existing KD Metal workshop on ground floor B.160, interfaced with CNC (Roland) and 3d Print facilities. **[1,2]**

**5.3.6** Material storage and sales incorporated within the new roof/plaza area between buildings 155/160, making use of the existing structure facing Fabrikmestervej for ease of delivery and secure, covered storage. Students are employed to run the materials shop, relieving staff to concentrate on expert activities. **[1]**

**5.3.7** Strategic development meetings between Facilities Management and KADK:LAB responsables. Meetings organised once per semester to discuss key development and investment areas, planning and scheduling of building maintenance, Health & Safety, areas of improvement, etc. **[1,3]**

## 4. Organisation

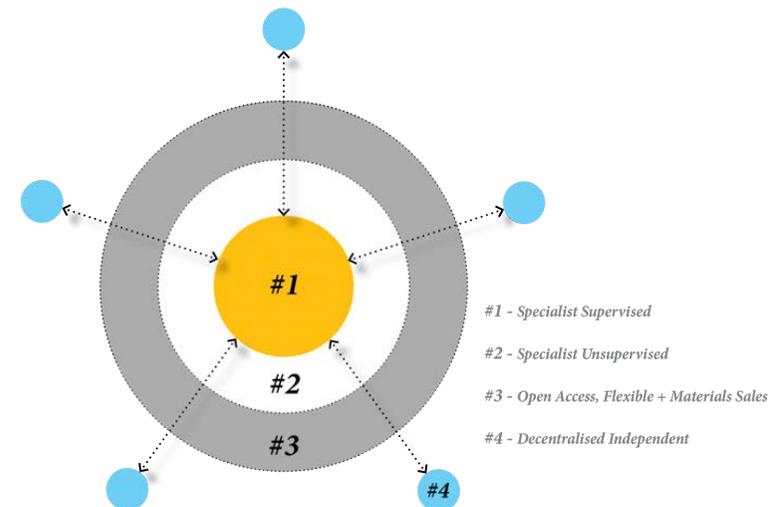
17 official workshop/lab facilities are identified on the [KADK website](#). These are distributed across the three schools geographically and administratively.

KADK:LAB will re-organise these workshops under a common umbrella administratively, and, as far as possible, geographically, to consolidate capabilities and facilities.

The following strategies unpack organisational issues related to space, management, networks, communication, and seek to embed structures for evaluating the efficacy of the organisation towards meeting the objectives of the three fold vision (Steering group (5.4.7)).

## Strategy

**5.4.1** KADK:LAB is organised as an 'onion' model, with core expertise and state-of-the-art facilities forming the centre, flexible mock-up spaces as an intermediary layer and distributed/de-centralised 'cells' that exist within, and are the responsibility of, study programmes/Institutes where required. Many independent workshops already exist in this way and help to localise key tools but also relieve workload from the 'official' workshops. This strategy is closely related to the previous section *Space*. [1,3]



**5.4.2** New appointments. It is essential that key appointments are made to implement and manage the vision, and to strengthen the academic standing of the workshops with regard to research and teaching. Appointments should be considered at leadership level (Professorial/Assoc. Prof), Postdoc level and Phd level. [1,2,3]

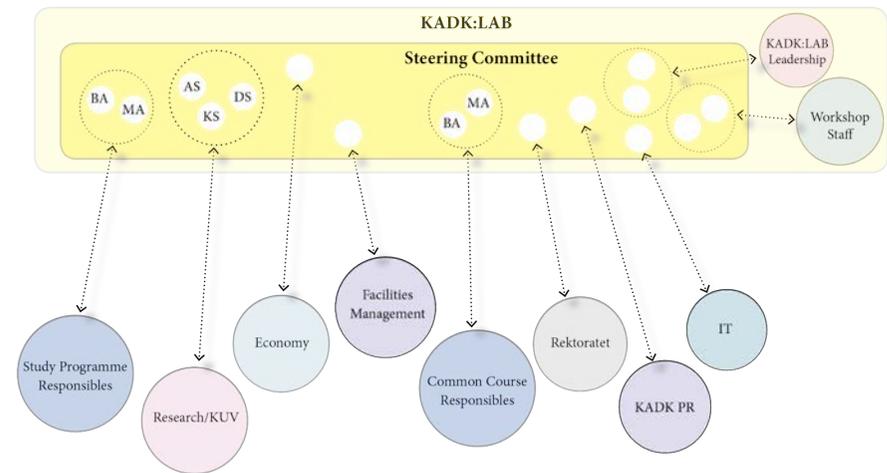
**5.4.3** Boundaries between workshops are ‘softened’ allowing crossing of disciplines and promoting synergies and innovative practices between expertise and facilities. The aim is to target an ideal of facilities that are ‘open’ to all, while maintaining methods of managing this through complementary strategies such as the ‘Elective and Advanced Elective Courses’ (5.2.4). **[2,3]**

**5.4.4** Strengthening lines of communication to research and teaching units, improving mechanisms for planning of activities and reducing bottlenecks. **[1]**

**5.4.5** Access. Extended access with ‘tutors’ (KAM model) allowing supervised use of facilities beyond normal working hours. Card-based access system could be implemented and linked to student database. **[1]**

**5.5.6** External networks. KADK:LAB will establish strategic partnerships with external partners to foster collaboration across facilities. Academic, industry and maker communities should be targeted **[1,2,3]**

**5.4.7** Establishing a KADK:LAB Steering Committee with broad representation from KADK stakeholders - KADK:LAB, Research/KUV, Teaching, IT, Management and Administration. **[1,2]**



## 5. Identity

A core **purpose** of KADK:LAB is to establish a **common identity** across existing workshops/labs and ensure they represent the **state-of-the-art** in expertise and facilities, with a particular focus on **high-technology**.

The ambition of KADK:LAB is to generate **value** within the immediate KADK community (across the three schools) and with external partners.

KADK:LAB will generate value in:

- strengthening the **academic relevance** of making and materially focused analytical practices
- sharpening the idea that workshops and labs are spaces of critical reflection supporting **‘thinking through doing’**
- spurring **innovation and knowledge creation** within workshop and lab based practices
- **critically responding to emerging trends** and cultures within workshop/lab practices, and relevant **policy level agendas**.
- stimulating **synergies** between workshops and lab environments

The value that KADK:LAB generates will be applied to:

- advancing **Research/KUV and Teaching** activities
- nurturing **innovation** of workshop/lab practices
- building **strategic partnerships** within and beyond KADK

The following outlines strategies for **building, communicating** and **evaluating** the KADK:LAB identity. Whilst the identity is common, the strategies for building, communicating and evaluating it should be differentiated between **internal** and **external aims**.

**5.5.1** Internal Identity Building. Initial focus should be making KADK:LAB’s resources, expertise and capabilities clearly communicated and referable. The Materials Lab can play a strong role, acting as a physical repository of resources showcasing proficiencies and competencies. **[1]**

**5.5.2** External Identity Building. KADK:LAB should actively participate in events (e.g. Åbent Hus, BloxHub events, Maker/HackerSpace events) and strategically selected communities (e.g. FabLab, FabCITY) to promote and develop KADK:LAB’s identity. **[3]**

**5.5.3** Communicating through **web & social media** presence. KADK:LAB will be active in developing its identity through a website and social media channels, to communicate activities, services, etc., with clear navigation for different interest audiences. **[1,3]**

**5.5.4** Communicating through workshop/lab focused **exhibitions**. KADK:LAB will hold regular exhibitions showcasing expertise and outcomes that focus on high-technology, contextualised within existing practices and traditions. **[1,3]**

**5.5.5** Internal Evaluating. Periodic evaluation of the KADK:LAB’s identity by the Steering Group and representatives from across the school with a focus on student participation to sharpen and refine the identity against internal contexts. **[1,2]**

**5.5.6** External evaluation of identity. Periodic evaluation by Steering Group and invited peer-group comprising industry, practice and other academic institutions to sharpen and refine the identity against external contexts. **[2,3]**

## 6. Budget and Funding

Assessments of budgets and funding has not been within the scope of this report, however, it is evident that implementing KADK:LAB will require a significant initial investment (10's millions krone), to cover the moving of workshops, modifications to buildings, staffing, new technology acquisitions, etc. We recommend that KADK:LAB develops a funding model comprising an *investment model* complimented with a *running costs model*.

The call for *mutual funds* to enable *strategic investments* has been made in prior reports and is reiterated here. The mutual funds, comprising core funding from KADK, will be supplemented through strategically sought funding, consultancy and other strategies outlined below.

Through the interviews it was found that material sales and charging for certain services (e.g laser cutting) provides an essential income stream that, in some cases, significantly outweighs operating budget.

### Strategy

**5.6.1** Mutual funds comprising core funding from KADK and supplemented through strategically sought funding, consultancy and materials supply.

**5.6.2** Investment model. KADK:LAB will develop an initial investment model that targets external applications for infrastructure grants (e.g from Realdania fonden, A.P.Møller fonden, etc.) supporting the development of spaces and large scale acquisitions.

**5.6.3** Running costs model. KADK:LAB will develop a complimentary running costs model together with KADK Administration and Economy to ensure long-term financial sustainability and enable strategic investment across all workshops.

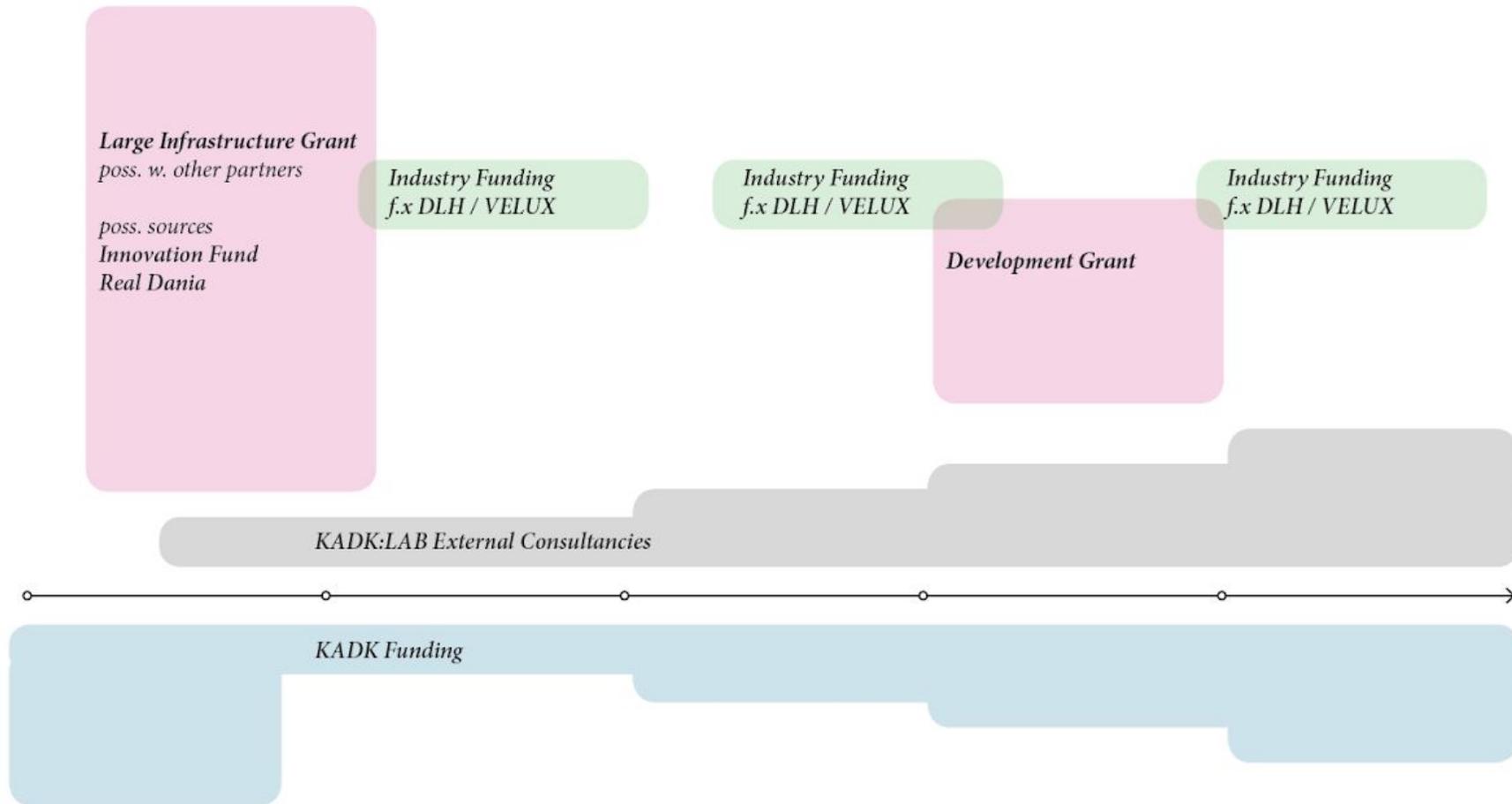
**5.6.4** External Consultancy. Within certain labs there is an under-exploited capacity for interfacing with industry/practice through paid consultancy. KADK:LAB should be active in promoting and exploiting this potential with a view to supplementing income streams and strengthening networks. **[3]**

**5.6.5** Research Funding. KADK:LAB should be active in searching and applying for research funding through the appointed academic staff. **[2]**

**5.6.6** External Sponsorship. KADK:LAB will be active in establishing sponsorship from external parties. This could also take them form of 'in-kind' contributions of technologies, tooling, materials, etc. **[3]**

**5.6.7** Short Post-Professional courses could be considered as a generator of supplementary income with the added benefit of building networks across practices and industries. **[3]**

**5.6.8** Material sales will be maintained and supported, where appropriate, through relocation and consolidation.



*Possible Funding Landscape*



## 6. Scenarios

### Scenario 1 - 'softening boundaries'

This scenario intersects the strategies *Softening boundaries to promote synergies and innovations of practices (5.4.3)*, *Elective and Advanced Elective courses (5.2.3)*, *KADK:LAB hosts and collaborates in the preparation of undergraduate courses (5.2.2)*, *KADK:LAB offers/hosts courses within the PhD school that intersect theory with practice(5.2.4)*.

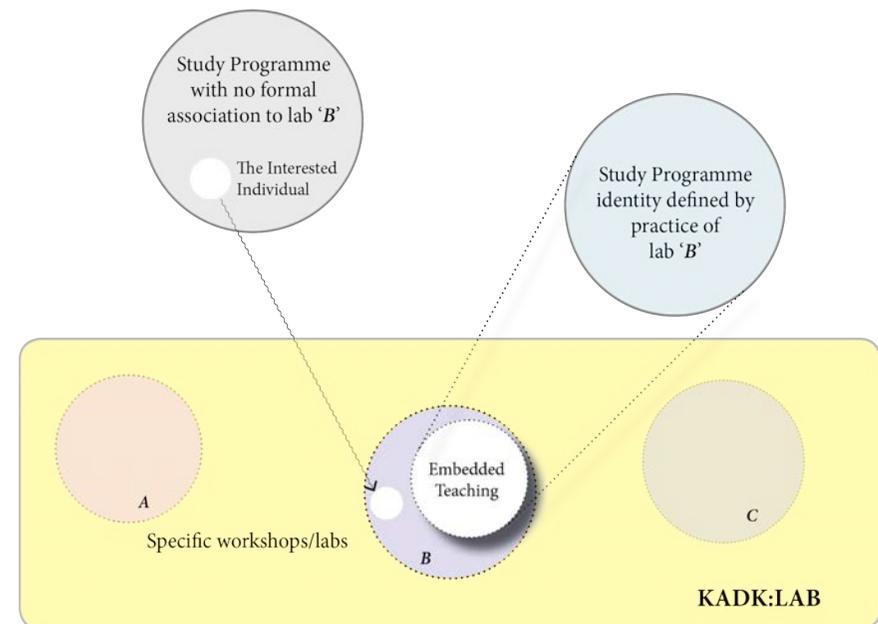
In this scenario a study programme or an interested individual wants to gain insight and experience within a workshop/lab facility, e.g. at a workshop/lab, where another study programme's identity is defined by practice at the workshop/lab, or specialist expertise are required. Boundaries between workshops are 'softened' allowing crossing of disciplines and promoting synergies and innovative practices between expertise and facilities. The study programme or the interested individual signs up for one of the Elective and Advanced Elective courses. **The course is developed between an active researcher and the workshop/lab staff and will include a practice and project based insight into a defined area of the workshop/lab.** A 'drivers licence' in that practice is given on completion of the course, allowing subsequent monitored access (5.2.3).

The aim is to target an ideal of facilities that are 'open' to all, while maintaining methods of managing this through complementary strategies such as the 'Elective and Advanced Elective Courses'.

Elective and Advanced Elective courses should be established as a mechanism for managing the ideal of 'access open to all'. A rotating variety of courses in particular workshop/lab practices are offered on a semester

basis and require signing up. Limited space courses are open to all - students and staff.

Related initiatives within this scenario for softening boundaries are KADK:LAB hosting and collaborating in the preparation of the undergraduate courses e.g. 6 week block course (5.2.2) or offering/hosting courses within the PhD school that intersect theory with practice (5.2.4).



## Scenario 2 - 'residency'

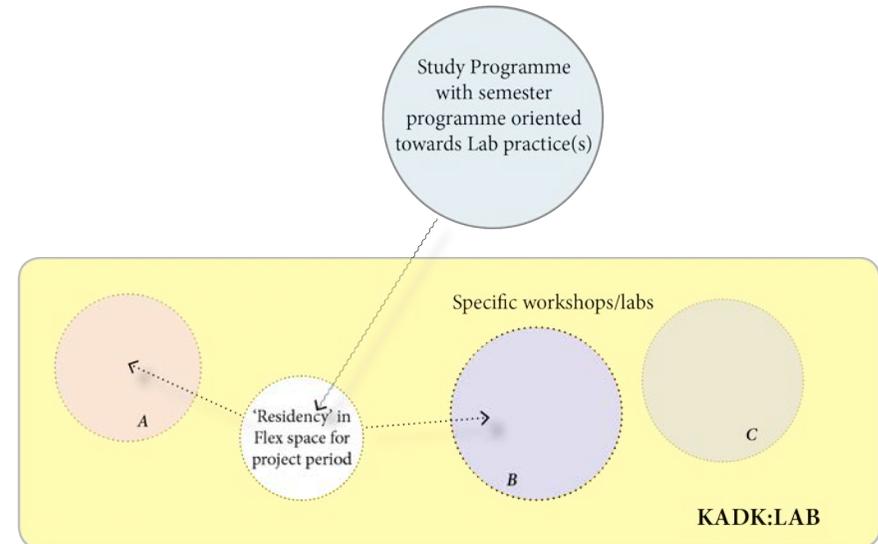
This scenario intersects the strategies *New flexible 'mock-up' spaces for short/medium term project development/experiments/residencies by internal study programmes or external guests (5.3.1)*, *Softening boundaries to promote synergies and innovations of practices (5.4.3)*

In this scenario a study programme with a semester programme oriented towards Lab practices aim for a "residency" in a "flex space". New flexible 'mock-up' spaces within KADK:LAB are accommodating short/medium term projects and development/experiments/residencies by internal study programmes or external guests.

The scenario reflects both the physical environment in building 90 appropriated to create these extended facilities in conjunction with specialist workshop, and as well the buildings 155/160 developed with a new roof, decks and ground floor plaza.

The study programme occupies a "flex space" in conjunction with relevant specialist workshops/labs and furnish "the flex space" in a meaningful way with all needs in relation to the semester programme. e.g. 3d printers, foam cutting, students tables, space for storage etc.

The "residency" in a "flex space" aims to concentrate all activities within the semester programme in a charged environment furnished especially for the purpose. The flex space will accommodate all needs and will assist in optimising space use where currently there are often redundancies. In addition, the "flex space" will foster the dynamic between the specialist workshops/labs, mock-up space and study environment.



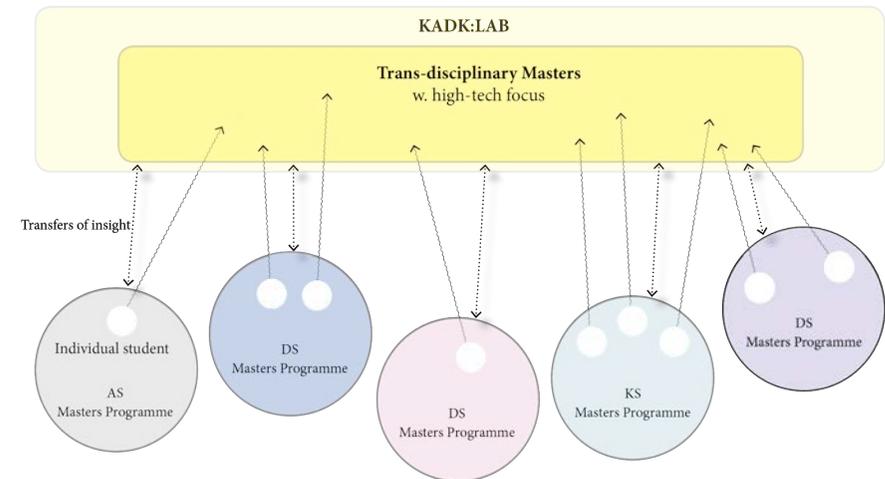
### Scenario 3 - 'trans-disciplinary education'

This scenario intersects the strategies *Embedding of teaching within KADK:Lab with the aim of strengthening technological competencies in a design-led context (5.2.1), Softening boundaries to promote synergies and innovations of practices (5.4.3)*

In this scenario teaching within KADK:Lab is embedded with the aim of strengthening technological competencies in a design-led context. By establishing a trans-disciplinary masters, accessible to students from any of the existing educations, a common focus on high-technology (computationally led) can be taught and explored in the context of their specific discipline. This would promote exchange between disciplines, establish new peer-groups and possibly foster new approaches that could feed research. In the trans-disciplinary masters, leading expertise from KADK and from outside will be teaching in collaboration with teachers from other programmes at KADK depending of the students specialisation.

Cross-disciplinary focuses can also be supported e.g. within emerging fields intersecting textile and architecture, or between furniture and textile with a focus on computational crafting.

The close collaboration between the masters with a focus on high technology and the other study programmes will aim both to be fostering new hybrid and emergent groundbreaking practices, and as well boost the other programs within new and high technology by involving the respective teachers.



#### Scenario 4 - 'extended network'

This scenario intersects the strategies *External networks*. *KADK:LAB* will establish strategic partnerships with external partners to foster collaboration across facilities (5.5.6), Research/KUV active staff actively engaged in applying for funded projects (5.1.5), Promoting exchange and discourse (5.1.4), Foster, broker and host pilot cross-disciplinary projects (5.1.2), High technology focused Industry linked projects should be targeted (5.1.3).

In this scenario KADK:LAB works as a platform for KADK's education, research and the labour market that promotes exchange and discourse between people at KADK:LAB and external partners. KADK:lab associates are e.g. researchers, programs or individual students . External partners are e.g. companies or external institutional study programs or research units. A collaboration may occur between a student and a relevant company. The collaboration might involve a relevant KADK:LAB expert that contributes knowledge and experience within state of the art high technology. Since it happens within KADK:LAB exactly this expert may be enrolled in another research cluster that collaborates with a relevant research unit from another institution. Such emergent interdependent relationships raise synergy that make up the basis for research seminars for exchange and discourse, and thus for the development of emergent hybrid fields and practices. In that way KADK:LAB will organise and host regular practice-based research seminars that intersect KADK:LAB experts (TAP & VIP) with external industry and practice and be a platform for education, research and the labour market. Thus fostering, brokering and hosting pilot cross-disciplinary projects occurring across workshops/labs that links to external partners, such as companies and institutions, establishing e.g. cross-disciplinary projects. This includes that Research/KUV active staff actively engaged in applying for

funding projects and establishing relevant PhD projects. High technology focused industry linked projects is targeted and provide research projects that have arisen in connection with *KADK:LAB*.

This will strengthening relations to existing Research/KUV entities (individuals, units, clusters, centers) so that KADK:LAB supports their activities and support the establishment of strategic partnerships with external partners to foster collaboration across facilities on all levels.

