

**Science and Art meet Technology and Business
- Service Design, Co-design and the Future Learning Center at Aalto University,
Finland**

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Abstract:

Aalto University operates on three campuses in two cities, Helsinki and Espoo (Finland) and consists of six schools: School of Chemical Technology, School of Electrical Engineering, School of Engineering, School of Science, The School of Business, and School of Arts, Design and Architecture. The University will centralize its operations gradually to one campus area meaning that also the three campus libraries will move to same area and form a joint Learning Center.

The Otaniemi campus library (= former Library of the University of Technology, library building designed by Alvar Aalto.) will be fully renovated to cater for the demands of a modern learning center. The versatile library services will get further support from new services and spaces that will support different ways of studying and working. After the renovation, the library will offer a modern and dynamic space, supporting the Aalto University spirit of multidisciplinary learning, research and working methods.

Planning of the Learning Center and center's services has been based on service design methods. In my paper I will present the service design process and the results of the process. The other half of the paper covers co-design methods used when building up the Learning Hub network. The Learning Hub network serves as a series of prototypes of Aalto University Learning Center.

Keywords: service design, co-design, learning facilities, library services, library buildings

1. Aalto University and Aalto University Library

Established in 2010, Aalto University was created by a merger of the University of Art and Design Helsinki (founded in 1871), Helsinki School of Economics (1911) and Helsinki University of Technology (1849).

Aalto University operates on three campuses in two cities, Helsinki and Espoo and consists of six schools: School of Chemical Technology, School of Electrical Engineering, School of Engineering, School of Science, The School of Business, and School of Arts, Design and Architecture. Aalto University will centralize its operations gradually to one campus area in Otaniemi, Espoo.

Some figures:

5 000 employees, 350 of whom are professors.

A total of 20 000 students, 3 500 of whom are doctoral students.

There are 2 500 foreign students.

A total of 80 000 alumni.

Number of graduates each year: ca. 170 with doctoral degrees, 1 200 with master's degrees, 1 400 with bachelor's degrees. In addition to these, there are 340 MBA or EMBA graduates.

At the moment there is a campus library on each campus, but by the end of the year 2016 the Campus Libraries Arabia (The Arts campus), Otaniemi (Science and Technology) and Töölö (Business) and the Library of the Department of Architecture will move to the premises of the former Library of the University of Technology in Otaniemi.



Figure 1. Aalto University Learning Center

A library building designed by architect Alvar Aalto, will go through a very thorough renovation. The service concepts and course of actions of the library will be redesigned. Other parties, in addition to the library, will join and offer their services in the same building. The premises will be rebuilt to be modern, still preserving the worthy heritage, to meet the needs of the customers and the library staff. The result of all this will be the Learning Center, which will take its place in the heart of the Aalto University main campus.

The needs and expectations of the library customers have changed very much. The circulation activity has decreased, the supply and usage of electronic materials has multiplied, ways of using study and working space have changed. At the same time, the old library building has become to the end of its technical life, and it needs to be refurbished.

The Learning Center is going to have a very central location on Otaniemi campus. In addition to the Learning Center, the library will offer its services also in Hubs, which are spread all over the campus, in the midst of the everyday life of Aalto community.

The planning of The Learning Center was divided in three parts:

SERVICE DESIGN

Designer: Kuudes Kerros

Service design final report 15.1.2014

ARCHITECTURAL DESIGN

- based on service design results

Designer: Architects NRT

Concept for the programming phase 27.3.2014

INTERIOR ARCHITECTURE

- based on service design results

Designer: JKMM Architects

Interior architecture concept of the programming phase 1.4.2014

In this paper I deal with service design project and also cover co-design methods used when building up the Learning Hub network. The Learning Hub network serves as a series of prototypes of Aalto University Learning Center.

2. Service Design – The process

“Service design is the activity of planning and organizing people, infrastructure, communication and material components of a service in order to improve its quality and the interaction between service provider and customers. The purpose of service design methodologies is to design according to the needs of customers or participants, so that the service is user-friendly, competitive and relevant to the customers. The backbone of this process is to understand the behavior of the customers, their needs and motivations.”
(Wikipedia http://en.wikipedia.org/wiki/Service_design)

Designing services for the future Learning Center is an interesting and challenging endeavor. A successful concept should answer the following question: Why would I visit the Learning Center if all the world’s content is available on my laptop from the home sofa? And because

Aalto University's Learning Center will not open until 2016 the design had to take a considerable leap into the future. There were and will be a great number of focus groups: students, teachers, researchers, corporate customers and other visitors while not overlooking the library staff who will eventually make any changes feasible.

Design Consultancy Kuudes Kerros (<http://kuudes.fi/en/>) was chosen to lead the service design project. The aim for this project that began in August 2013 was to create a service concept for the new Learning Center and involve end users in its design.

Creating new service concepts was initiated by distinguishing the different user groups of the library and their needs. Three service design teams were formed with Aalto University's students, researchers and library staff recruited to each. The teams widely interviewed university students and staff under the supervision of the designers. "We didn't ask users to come up with ideas for new library services, but instead we charted working and studying routines and daily life on campus. This way we got our hands on concrete user needs" says Jari Danielsson of Kuudes Kerros Oy.

The target groups interviewed were:

- students at Arabia campus
- students at Otaniemi campus
- students at Töölö campus
- researchers
- members of staff
- alumni
- teachers
- corporate partners
- Vipu-team (ICT Support for Education)
- TOST-unit (Strategic Support for Research and Education)

The focus groups together with the service design teams started to familiarize with the everyday life on campus. At first they tried to close their eyes from the relationship the user group currently has on the services. They asked questions such as "What is your normal day generally like on campus?" and "At what kind of moments have you felt that you have really learned something?" They started with the generic and gradually as the interviews progressed they identified things that were repetitious in the focus group's everyday life. They paid attention specifically to the nature of learning and working in the future which forms strategy for the Learning Center.

As the interviews progressed the teams began to conceive the real playing field of the Learning Center. They understood that the Learning Center will compete for its users' time and attention against several other players.

Eventually six focus groups from the library users were identified. The largest focus group, i.e. the students, was divided into three different groups ("jack-of-all-trades", "gregarious animal", "a lone wolf"). At first while interviewing students the teams noticed differences between Aalto University's Schools, but in the end they realized that if the Learning Center is to put into effect university's strategy, they cannot treat users as they are now. Therefore the students were divided into three profiles according to their behavior. The other focus groups forming the basis for the design are the teachers, researchers and corporate customers.

User profiles modelled on the basis of the interviews act as the framework for developing the service concept. New services were generated and refined in a variety of workshops and the best ideas were prototyped and tested with the users. Alongside the service design project partnership interviews were carried out with the university's other service units to look into their wishes regarding activities at the Learning Center.

3. “Learning together makes us best in the world”

Based on user profiles the teams started to build ideas on new services that not only meet user needs but also match the Learning Center strategy. The Service Design project generated an ambitious service promise for the Learning Center “Learning together makes us best in the world”, and a novel service concept including new services arising from customer needs in addition to existing services. The concept entails four subdivisions:

- Information and learning – delivery of information resources, i.e. the library's current services
- Working – services that support working alone or in a group
- Events & Networking – services that support events and networking
- Personal Productivity & Learning to Learn – services that support personal productivity

3.1 From super data room to science & art square

In result of the Service Design project all together 23 new services were described in the final report. Here I present some of the services in short.

Services supporting learning

Academic mind sparring

- a concept or a space in the Learning Center where 2-4 students/teachers/professors can meet and change ideas
- possibility to get or invite audience

Accessible learning - Pitch/MOOC room

- space where a teacher or a student can videotape her/his lecture or edit the material and where students are able to study together using learning environments and MOOCs
- possibility to rehearse a presentation
- open 24/7

Customize your own workplace

- major part of the space at the Learning Center is planned and furnished in a way that it is easy to change according to different needs

Social spaces

Alumni & teacher's lounge

- a space where teachers, researchers etc. can meet and relax
- students are not allowed to enter

Lock & load

- a space where one can relax by exercise or meditation
- possibility to load also mobile devices

Café – Restaurant – Terrace

- meeting point for everyone

Working spaces

Cave room

- a room where no-one or nothing can disturb
- can be reserved for a certain time period

Meeting space – S, M, L, XL

- small and big rooms that can be customized according to the needs of the group
- open 24/7
- near to the kitchen

Media services and spaces

Super data room

- all the software licenses available in Aalto University
- possibility to learn to use software used in another fields of science or art

Beta room

- a space where library customers will be introduced to new services and they are able to test the service

3D printing heaven

- possibility to learn 3D printing technics and print

Visual resources center

- image collections and image databases + archival services
- possibility to digitize images and lend different devises

Event spaces

Science & art square

- a showroom for projects, products, research, art and design by Aalto University Schools

DIY seminar service (web-based)

- everyone organizing a conference or a seminar updates her/his needs (technics, need for space etc.) to this system
- makes it easier to organize an event, because information on both organizers and different service providers can be found through the same service
- information about seminars and conferences within Aalto University in one place

3.2. The next phase

When service design project was finalized, work was continued with spatial design where programming architects allocated services into the space available. At the same time it was investigated what kind of changes are allowed in the historical building designed by Alvar Aalto. Also the plan for the interior design was finalized during the spring 2014.

In the Aalto University library we have decided which of the services will be developed in the near future. We have also appointed a librarian per service and it will be her/his duty to gather a group (colleagues, students, staff, etc.) that is going to refine the service by the end of 2014. We will start testing some of the new services in January 2015. And when the libraries, with their staff and collections, move to the premises of the Learning Center in the end of 2016 a large selection of new services will be added to Learning Center's portfolio.



Figure 2: An interior from the Learning Center, illustration.

4. Co-design and Learning Hubs

Co-design or **codesign** is a product, service, or organization development process where design professionals empower, encourage, and guide users to develop solutions for themselves. Co-design encourages the blurring of the role between user and designer, focusing on the process by which the design objective is created. This process believes that by encouraging the trained designer and the user to create solutions together, the final result will be more appropriate and acceptable to the user.
(Wikipedia <http://en.wikipedia.org/wiki/Co-design>)

Aalto University Learning Hub is an umbrella concept that unites a network of independent experimental learning spaces within Aalto University campus. Learning Hubs are innovative, user-driven and multi-functional facilities that accommodate studying, team work and sharing of knowledge in a relaxed setting. They also serve as meeting points, venues for varying

events, working spaces or cozy living rooms where people from different backgrounds and varying disciplines come together to communicate, collaborate and discover. Learning Hubs are open for everyone, from students to university staff, from company representatives to the general public, encouraging interaction between strangers.

The Learning Hub concept was created in 2011 by an International Design Business Management (IDBM) student team based on Aalto University strategy for Learning Center development. Therefore, the Learning Hub network serves as a series of prototypes of Aalto University Learning Center. When the Learning Center is established in 2016, the network will continue its operations to compliment the service portfolio of the center. Empowering constant natural change is the driving force for the Learning Hub development.

The main differences between Aalto University Learning Hub project and similar activities around the world are its true grassroots origin and design approach that empowers university community to directly participate in campus development.

Learning Hub concept functions on three levels: physical, virtual and social. On the physical level, the project aims to answer the need for new types of spaces that better support learning outside the classroom, knowledge sharing and collaboration. These spaces are always designed together with the Aalto University community. In practice, each Learning Hub is created by a volunteer student team – student from every campus - with input from other students and staff. To promote efficient use of university facilities, Learning Hubs recycle overlooked spaces and thus intensify their utilization. Learning Hub has strong presence on the Internet and in social media. It also collaborates with Aalto University projects that work towards creating a virtual campus environment. Combined, all people involved with the Learning Hub project create a wide social network united by passion and courage.

Hubs at the moment:

Lerning Hub of the Department of Forest Products Technology

<http://web.lib.aalto.fi/learningcenter/pilots/learning-hub-of-the-department-of-forest-products-technology/>



Figure 3: Visualization (3), team Nähdään. Photo: Paula Haikarainen

Learning Hub Greenhouse (School of Science)

<http://web.lib.aalto.fi/learningcenter/pilots/learning-hub-greenhouse-sci/>



Figure 4: Learning Hub Greenhouse

Learning Hub Living Room (School of Chemical Technology)

<http://web.lib.aalto.fi/learningcenter/pilots/learning-hub-living-room-chem/>



Figure 5: Learning Hub Living Room

Learning Hub Sundeck (School of Engineering)

<http://web.lib.aalto.fi/learningcenter/pilots/learning-hub-sundeck-eng/>



Figure 6: Learning Hub Sundeck

Aalto Hub Töölö (School of Business)

<http://web.lib.aalto.fi/learningcenter/pilots/aalto-hub-toolo-biz/>

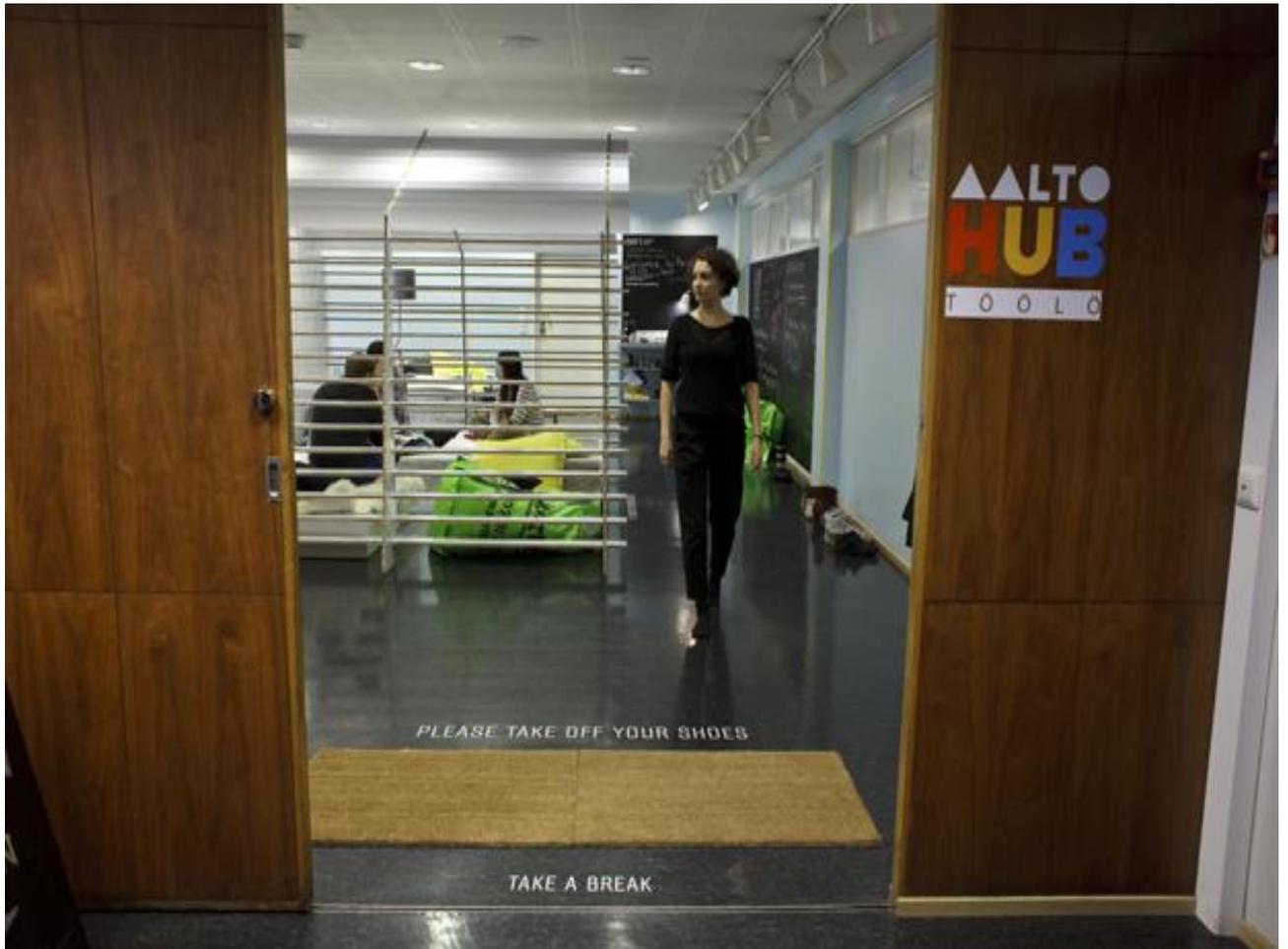


Figure 7: Aalto Hub Töölö

TOKYO Hub (School of Arts, Design and Architecture – Student Association Tokyo)
<http://web.lib.aalto.fi/learningcenter/category/news/>



Figure 8: TOKYO Hub

5. In conclusion

The Aalto University Learning Center will be opened at the end of the year 2016. The Learning Center is going to merge three campus libraries – Arts & design, Business & economics, Science & technology - and offer library services and spaces to six schools and over 25 000 students and members of staff. This merge will be challenging not only for the customers but also for the library staff.

The Service Design project was finalized in January 2014 and as a result of the project there is now an ambitious service promise for the Learning Center “Learning together makes us best in the world”, and a novel service concept including new services arising from customer

needs in addition to existing services. We shall continue to refine and test some of the new services. All the services will be planned together with students, staff and other Aalto University units. Some of the services will be planned with corporate partners.

The new service concept will support the transformation of the library into a lively multi-channel Learning Center – a component of the learning environment. In the future the Learning Center will be a magnetic meeting point that will showcase the university's activities and support learning alone and together, and thus support the strategy of Aalto University. In addition the Learning Center will offer its services also in Hubs, which are spread all over the campus, in the midst of the everyday life of Aalto University community.

The Learning Center will offer innovative library services and spaces that support collaborations between art, business, science and technology. In fact the entire Learning Center will be the place where **Science and Art meet Technology and Business.**

Appendix

Space outline

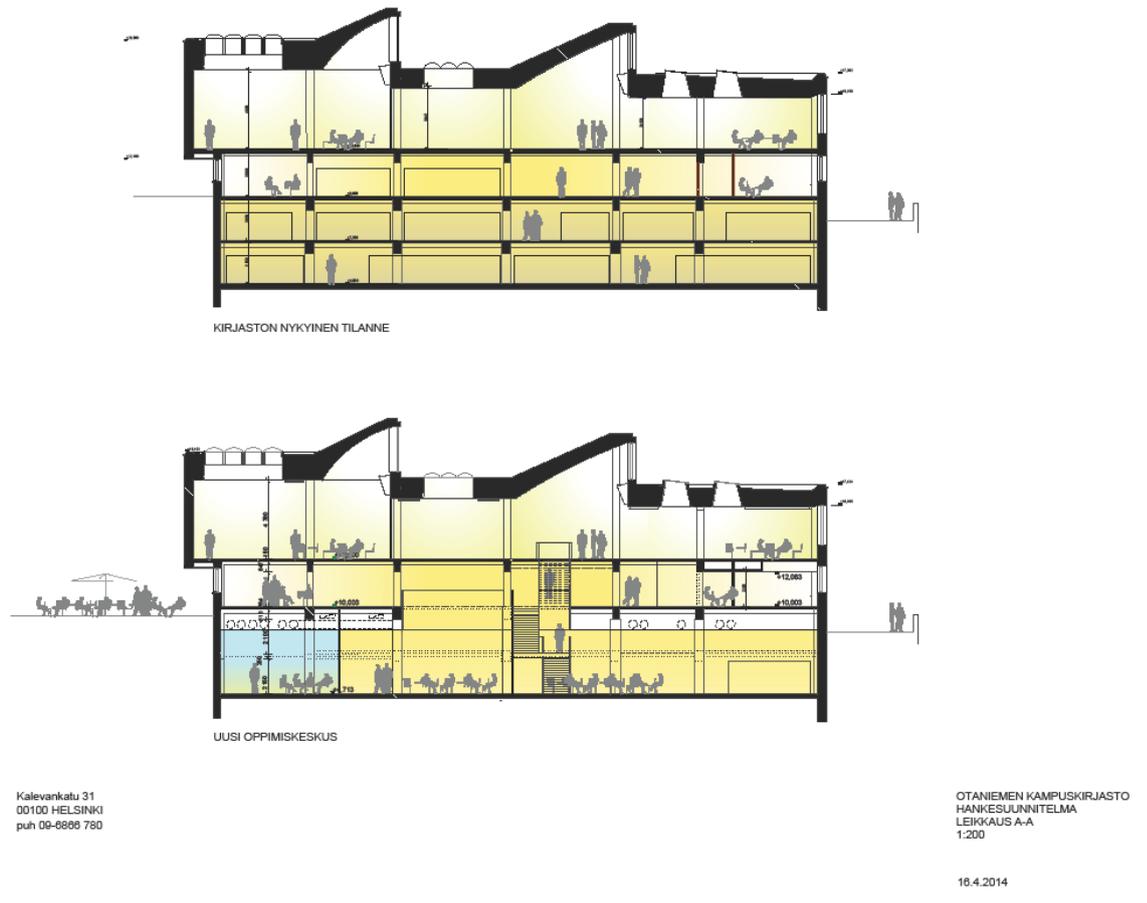


Figure 9: Changes in the Library building.
The level between the two basement floors is removed according to the architectural plan.



Figure 10. The service areas at the 1st ja 2nd floor of the Learning Center (the interior architecture concept).

Floors

- The upper floor remains timeless and within Alvar Aalto's spirit. The original library feel is preserved. The space is brightly lit, however, as one progresses lower the natural light reduces, and the interior design gets more casual. The role of colour is also increased on the lower floors.
- The first floor houses the science and art corner, cafe and betadesk services. This floor is the most buzzing area of the Learning Center.
- The lobby borrows features from a hotel lobby. There is a main exhibition space, lounge areas and the main information desk with the so called Community Manager. The lobby has access to the café and other spaces on the 1st floor.

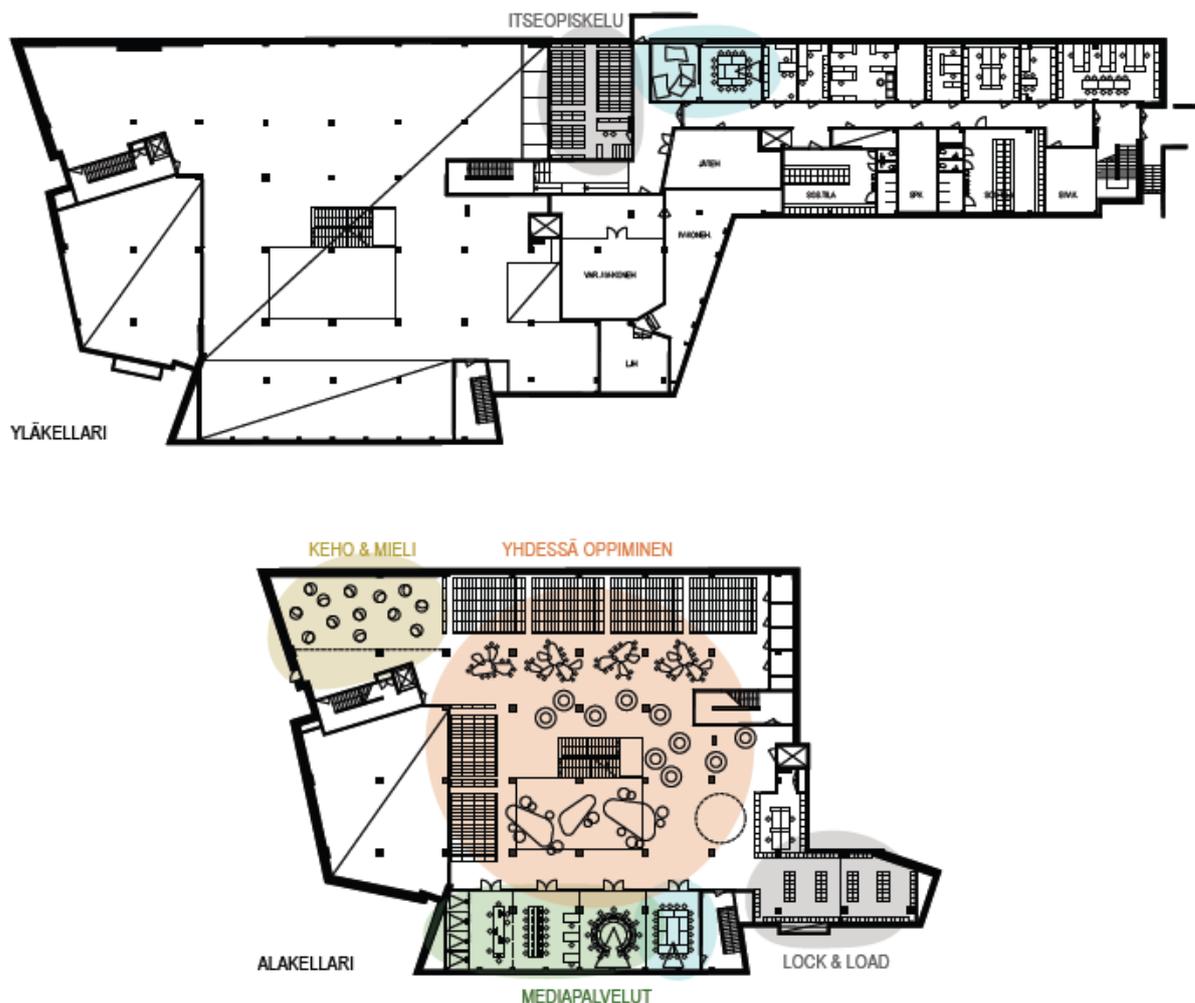


Figure 11. The service areas at the upper and lower basement of the Learning Center (the interior architecture concept).

Floors

- The level between the two basement floors is removed according to the architectural drawings. There will be a view from the basements into the 1st floor. The basement houses the media rooms with glass walls, some collections, and the Cave Room for quiet concentration. The bottom floor (alakellari) provides a casual space for learning together. In contrast with the 2nd floor, this space steps away from the traditional library environment. Essential to the space and the furniture is the way they should be inspiring and encourage innovative thinking
- The upper basement (yläkellari) will also have bookable space as well as staff working areas.

Zones and encounters

- The report outlines the library's privacy zones on the scale of public, semipublic and private. These zones have different soundscapes.
- Staff working areas are also zoned: open, shared or named working spaces. The plan takes

into account the outcomes of staff interviews.

- Customers do not enter a staff member's private office but they can also communicate in a semipublic space. Work is also done in these customer interface areas. The main information point directs customers from the Learning Center's lobby further to information points on the different floors.
- In addition to the lobby, Aalto University's activities are showcased in countless ways on the different parts of the building from smart walls and art installations to pop-up exhibitions utilizing traditional display cabinets and interactive screens.

Acknowledgments

Designer: Kuudes Kerros

Service design final report 15.1.2014 (in Finnish): http://web.lib.aalto.fi/learningcenter/wp-content/uploads/2014/02/Oppimiskeskus_loppuraportti_300114_JULKINEN.pdf

Designer: Architects NRT

Concept for the programming phase 27.3.2014 (in Finnish):

http://web.lib.aalto.fi/learningcenter/wp-content/uploads/2014/04/Oppimiskeskus_Hankesuunnitelma_alustava_140327.pdf

Designer: JKMM Architects

Interior architecture concept of the programming phase 1.4.2014 (in Finnish):

http://web.lib.aalto.fi/learningcenter/wp-content/uploads/2014/04/Oppimiskeskus_Sisustuskonsepti.pdf