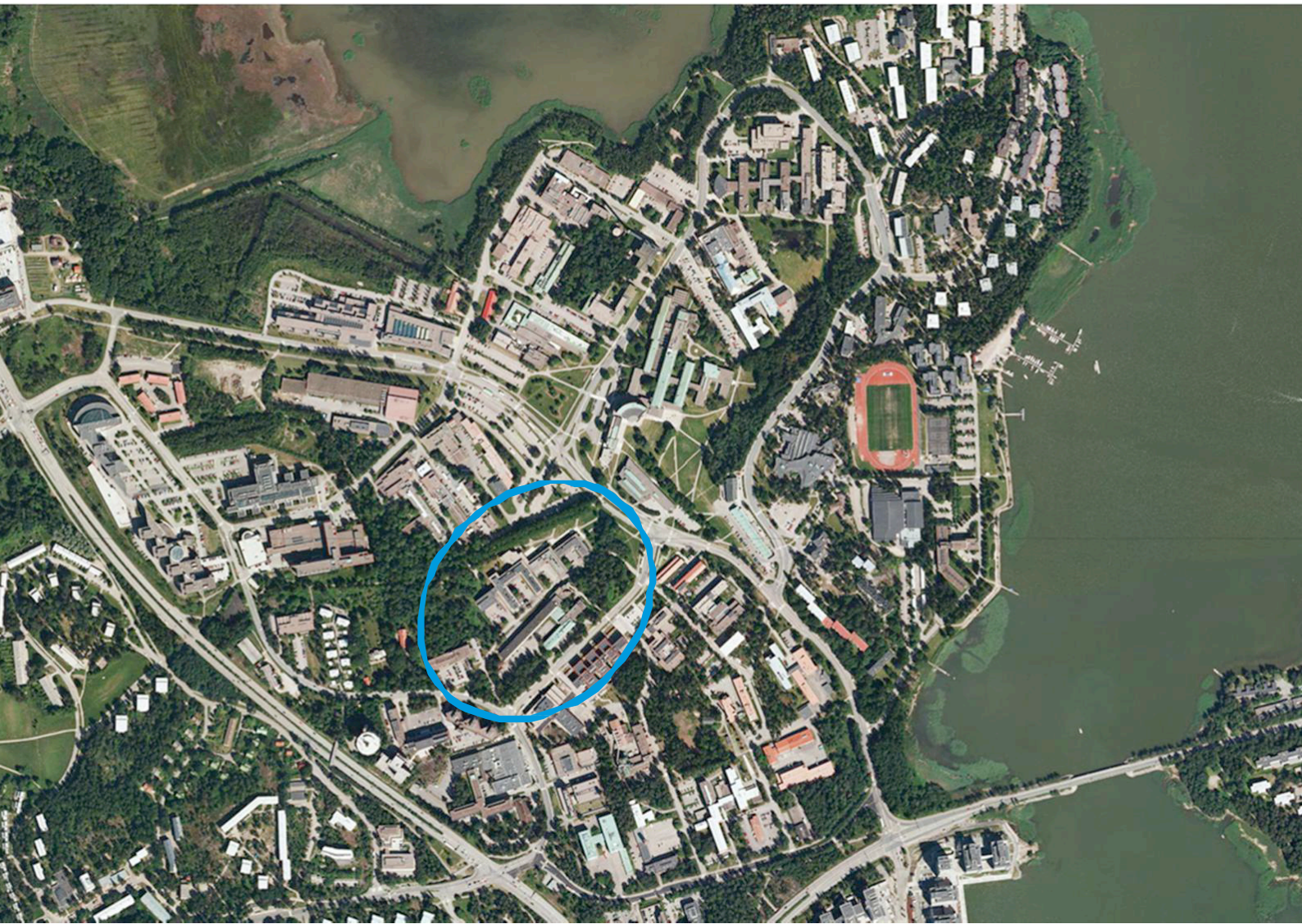


MOUNTAIN
OTANIEMI MAN



MOUNTAIN MAN, OTANIEMI

**INTERNATIONAL INVITATIONAL
ARCHITECTURAL DESIGN COMPETITION**

15 June to 15 November 2016



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1. Background of the Competition



Otaniemi and Aalto University

Even on European scale, Otaniemi is a notable hub of close collaboration among a university, research facilities, and companies. In the near future, Otaniemi will develop into a more densely built mixed-use environment, with various user groups utilising the facilities. Otaniemi's expansion and transformation stem from principles of extensive user-orientation and development of the collaboration among the university, research institutes, authorities, politicians, and companies. The objective is to create a versatile environment that fosters interaction between research and the arts while also placing the living environment and leisure services in harmony.

The Aalto University Board aims at centralising university activities in Otaniemi to promote the university's development as a multidisciplinary and creative university. With a view to achieving this goal, Aalto University will undergo extensive devel-

opment over the next few years. Aalto University has almost 20,000 students.

The special character of each Aalto University property in Otaniemi is taken into account in all development work. With the design of the various areas, the aim is to create a varied townscape and urban culture. Even though Otaniemi was built in stages, one area at a time, it has retained its uniform character, which should also be supported in the future.

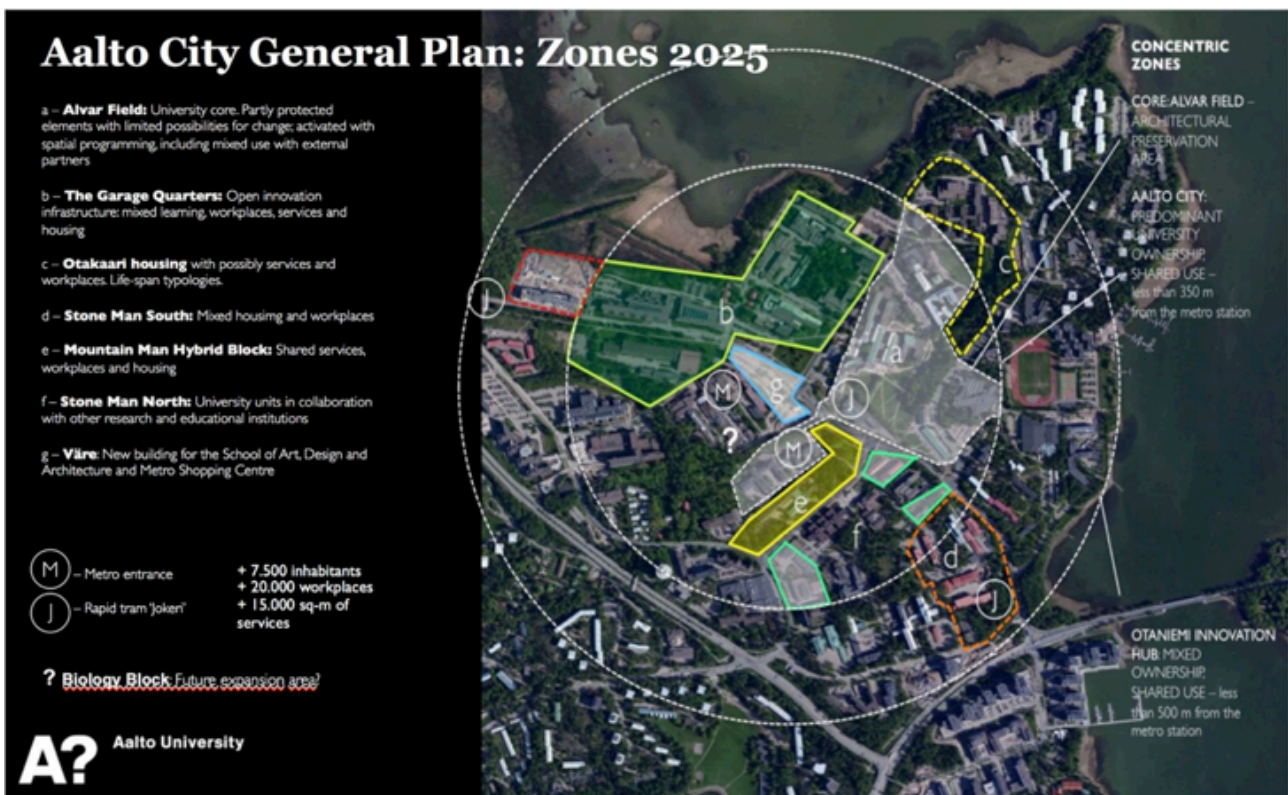
Because of its large size, it is natural for Otaniemi to have separate districts.

The historically valuable core of Otaniemi is largely based on Alvar Aalto's city plan, consisting of relatively large university buildings with urban spaces between these facilities. The facilities in this area includes Otakaari 1 (the Undergraduate Centre, the main building of the former Helsinki University of Technology), the Learning Centre (the former library), Dipoli, the Otahalli Sports Centre, the

Otakaari 11 shopping centre, and Aalto University School of Chemical Technology (in the competition area), along with the most significant outdoor areas, the triangular Rakentajanaukio Square, and the area of the Ossinlampi Pond. The university intends to acquire as much of the land in this core campus area as possible, aiming at centralising its operations. The heart of this core area is formed by the new metro station.

The university also aims to own a considerable amount of land within a 350-metre zone surrounding the metro station, to ensure that the prerequisites for its future operation are met. It may also lease land in this zone to various operators. The purpose is to mix functions and user groups within the city blocks and even within individual buildings in this collaboration zone. The collaboration zone includes 1) the 'Garage Quarters', or the 'Industrial Internet Campus' (the Konemies, Puumies, Tietomies, and Marine Technology blocks); 2) the School of Arts, Design and Architecture and a small new shopping centre linked to it; 3) the

Material Science and Engineering block; and 4) the northern part of the Kivimies block. These areas will be developed into a user-friendly environment, with pedestrian streets lined by buildings and street-level premises that have open frontages. In combination, the Väre building and the rest of the Garage Quarters, surrounding it, form the university's most significant development area for the near future. For example, the new Media Centre is being planned for this area. The Industrial Internet Campus is an expanding collaboration area for electrical engineering, mechanical engineering, and sciences. The objective is to develop Aalto University Material Science and Engineering block, located to the north of the Vuorimiehentie Street and within the competition area, into a hybrid block where various uses and user groups mix and share premises whenever possible. In addition to research and office premises, the plan for the block includes a meeting space for student unions, a shopping centre, a car park, and housing.



The third and outermost zone includes the southern part of the Kivimies block (Lämpömiehenkuja 2, which houses the Design Factory, Urban Mill, and Startup Sauna, among other premises) and Otakaari 5–7. The university is planning to sell these areas, the furthest from Otaniemi's centre, to centralise its functions and create collaboration opportunities. The plan is to build housing along Otakaari, between Dipoli and Otakaari 5. However, the sale of these areas is contingent on certain elements that foster the development of Otaniemi, Tapiola, and Keilaniemi by advancing the centralisation of university functions in Otaniemi and the creation of multidisciplinary collaboration, small-business operations, a pedestrian environment, and mixed-use functions.

A new campus building called 'Väre', based on the winning design in the international architectural design competition held by Aalto University Properties Ltd in 2012–2013, will be built in the centre of Otaniemi. These new facilities, with a gross building area of 43,000 m², will be occupied among others by the Aalto University School of Arts, Design and Architecture. In addition to Aalto University functions, the new building will house the Metro Centre and its services. The West Metro line will begin operation in August 2016.

The university promotes experiments with spaces and functions, such as creative shared use of buildings and areas. The area should also feature more meeting points for various actors operating in the area. In the future, work, accommodation, services, and the world-renowned architecture of Otaniemi will be linked in unique ways.

More accommodation facilities for students and researchers will also be built in Otaniemi. Normal housing production will be promoted and services increased in the vicinity of the area. After the completion of the new residential building projects, Otaniemi's population will at least double.

In the future, Otaniemi will be a vibrant, international innovation hub in the fields of science, the arts, research, and economics. Its milieu and its

innovative area and space solutions will be manifestations of the area's openness, community spirit, carbon-neutral construction, and smart and user-friendly technology.

Otaniemi's development phases

Technical education in Finland has its roots in the mid-19th century. The Polytechnic Institute began operation in 1879, and in 1908, it became the Technological University of Finland, which trained engineers, architects, and doctors of technology. After the Second World War, the university began to suffer from a shortage of space and needed to move from the city centre of Helsinki to a more spacious area on the outskirts of the city. The lands of Otaniemi Manor were chosen as the new location. Alvar Aalto's office won the architectural design competition for the new campus in 1949. The development of Otaniemi began with the construction of student housing, which originally served as accommodation for athletes participating in the 1952 Helsinki Summer Olympics. The university transferred its operations to Espoo in stages, with the majority of functions making the move in the 1960s. At the same time, VTT (the Technical Research Centre of Finland), which had strong links to the university, relocated to the campus. Since then, construction has proceeded one project at a time.

In his design competition entry, Alvar Aalto merged the American campus design philosophy with European modernism, adapting these to the milieu of the Otaniemi Manor in a sensitive manner. He also adopted this approach in his general land-use planning, which continued until the late 1960s. An important aspect of Otaniemi's land-use planning and building has always been – and still is – its relationship with nature and scenery.

Aalto's office designed a considerable proportion of the campus buildings completed in the 1960s and 1970s, and the area also features designs by other noteworthy architects, such as Reima Pietilä and Raili Pietiläinen (Dipoli) and Kaija and Heikki

Siren (dormitories in the student village and the chapel). Therefore, Otaniemi, in combination with Tapiola Garden City, which was built at the same time, forms an exceptionally valuable modernistic architectural environment.

Over the decades, research units run by the private and public sector, other facilities, housing, and services that are to some extent related to the former university of technology and VTT Technical Research Centre of Finland have arisen on the edge of the campus area formed by these two institutes.

Merger of the developing city district and the university campus

Established in 2010, the Aalto University comprises not only the former Helsinki University of Technology but also the former Helsinki School of Economics and the former School of Art and Design, which were originally based in Helsinki. Even though the majority of the associated facilities and functions either have already moved to Otaniemi or are in the process of doing so, good transport connections to the Helsinki city centre and academic hubs in the capital area, particularly by rail, will continue to be extremely important.

The Aalto University campus is increasing the amount of its activities by adding new buildings in the area and by making more efficient use of the existing facilities. As a result of the large-scale international architectural design competition held in 2012–2013, a new building complex for the School of Arts, Design and Architecture (ARTS), which will be linked to the new metro station and a shopping centre, is being constructed. Elsewhere, a more densely built environment will be achieved through, for example, moving parking into dedicated parking facilities.

At the same time, expansion outward must still remain possible. A world-class multidisciplinary university needs space in which to grow and adapt. These needs are difficult to predict and determine accurately in advance. The university and

the main land-owners are currently drawing up a general plan to prepare for Otaniemi's future expansion and change requirements. At the moment, this vision does not have political or judicial status, and the town planning process is proceeding via block-specific changes to the local detailed plan, pursuant to the law.

Otaniemi as a cultural environment, RKY 2009

Otaniemi has been classified as a nationally important built-up cultural environment. This was done as part of a government-approved inventory (RKY 2009) of built-up cultural environments referred to in the national land-use strategy, proceeding from the Land Use and Building Act. This inventory provides guidelines for construction in the target areas. The goal is to protect the structure, townscape, and buildings and environs of the nationally significant cultural environments in Finland. The factors contributing to Otaniemi's classification in that scheme include its comprehensive general planning and the architecture of the buildings in the area.

Nationally significant built-up cultural environments represent the development stages of our country and are reflections of history. The question is not only about conserving traditions but also developing the areas in a manner that strengthens their specific characteristics and special features, and adapts to them. The objective is to adapt complementary building and other changes to the specific characteristic and special features of the cultural environment.

The following is an extract from the RKY Web page of the National Board of Antiquities, in translation:

The city plan covering the facilities and residential properties of the University of Technology and VTT, the Technical Research Centre of Finland, is considered one of Alvar Aalto's finest. What is very characteristic of the plan is the utilisation of the shapes of the terrain, the use of open and exten-

sive green spaces, and the spacious and versatile layout of red-brick buildings. The University's main building, along with the Otaniemi Chapel and the Dipoli student union building, is included in the selection of important Finnish architectural and environmental sites of the international organisation DOCOMOMO. The main building, its amphitheatre-shaped lecture hall, and its library with its distinctive central green form the heart that unites the campus. It is surrounded by 'campus cells' with their facility buildings and laboratories. These are grouped either into oblong configurations with connecting pathways or into fan-shaped clusters of buildings. The plan for the two most extensive laboratory zones – the Puumies and Kivimies blocks – consists of a grid-style street layout. Car traffic runs on roads outside the campus area, which is separated into districts by park areas. The eastern part of the area is reserved for the social functions of the campus, while residential buildings lie in the wooded areas by the shore.

Otaniemi as an innovation ecosystem

As a mixed-use environment with a variety of user groups, Otaniemi serves as an innovation ecosystem. Otaniemi's Design Factory and other facilities housing multidisciplinary functions and business start-up activities are at the heart of innovation and interaction in the area. Otaniemi is now moving on to the next stage in the development of multidisciplinary environments by integrating such functions into research and education activities on a larger scale. The goal is to develop the Garage Quarters and Vuorimiehentie blocks into vibrant urban environments. Currently, the area contains buildings, built in different decades that can be creatively adapted and expanded without being restricted by protection requirements. The University is building new premises for its units, and the goal is to attract to the 'Aalto City' both smaller companies looking to grow and larger Finnish and international companies operating in sectors related to the fields covered by the University. The urban nature of the area will be reflected in

the street life, small unit sizes, and mixed-used functions within buildings, plot, and blocks. Thus far, the campus area has been surrounded by business parks, but in the future, various actors will operate in the same mixed-use blocks at the heart of Otaniemi. At the same time, the University will improve the service infrastructure in the area. Otaniemi's services have been inadequate and distributed in a dispersed manner. Outside working hours, the area has been relatively deserted, resulting in a low number of potential customers. Services targeted at both the University and companies will be located in the central development areas of the campus and in the vicinity of the Aalto University metro station. A related goal is to increase the use of the area outside working hours and to improve services for local residents. The increase in housing in Otaniemi and the new forms it will take on will be taken into consideration in the planning of services for the area.

The Aalto University metro station and the new building of the School of Arts, Design and Architecture will form the hub of the innovation blocks. In the future, other university buildings in the area may include the Design Factory (featuring an expansion), the Startup Sauna, and facilities of the School of Engineering and the School of Electrical Engineering, and a centre for future digital media. For the Puumies and Konemies blocks, the new thematic focus will be on the multidisciplinary activities in the field of the industrial Internet.

The plan is also to develop the area through partnerships with companies in the fields of property management and services. Enhancing the attractiveness of Otaniemi is in the shared interest of all actors operating in the area.

Objectives of the city planning board of the city of Espoo for the objectives of further design of the Otaniemi centre, 20 May 2015:

"The functions of the centre area expand to the south of the Metro Centre, comprising the plot 10016 located opposite the formerly Aalto University library. The objective is to place commercial

and other services, functions of the university, student and organisational activities, as well as privately financed and student housing. The aim is to achieve a mixed city structure, where functions of highly varied uses can coexist in the same building.

The centre area will be developed as the centre of functions and commercial and other services, as well as a hub of public transport and pedestrian and bicycle connections, providing good connections towards the point of the Otaniemi peninsula and Keilaniemi. The city planning relating to each subarea in the Otaniemi centre will be connected to the broader entity of Otaniemi and Keilaniemi.

Otaniemi is a pilot project in the national development program called “Viisas kulkutavan valinta” (Smart selection of transport mode). In conjunction with this, as already required by the board, a report will be drawn on the internal transport and movement within the area supporting the use of the underground (for example, a shuttle bus route). An overall plan will be made of the pedestrian and bicycle routes in Otaniemi and Keilaniemi”.

2. General Competition Information

2.1 The competition's organiser, character, and aim

The competition is being arranged by Aalto University Properties Ltd in collaboration with Senate Properties. The goal is to create a comprehensive solution that is vibrant, unique, and of high quality in terms of its cityscape, for one of Otaniemi's central blocks, resulting in a nurturing environment for top research, living, and interaction among various groups. The objective is to create a new, more densely built urban environment.

A new centre of excellence in bio-economy, Bionova, is to be designed for VTT, the Technical Research Centre of Finland. It will exist partly in connection with the existing buildings.

A new Students' Community Building will be designed for student unions, realised by the Aalto University's Student Union (AYY), the Association of Economics Students in Helsinki (KY), and the student organisation Teknologföreningen (TF). These student organisations are looking to create an interdisciplinary meeting place and a centre for student activities, with the student centre at its core, complemented by nearby student housing.

In addition, the competition block will provide housing for people who work and live in Otaniemi.

Another goal is to find one or more designers for the new buildings through the competition. The intention is to commission the winner of the competition to design the city plan for the block and the plan for one of the buildings.

2.2 Form of the competition

The competition is arranged as an international invitation-based architectural design competition under the competition rules of the Finnish Association of Architects.

2.3 Invitees

The following design teams are invited to participate:

- Estudio Herreros, from Madrid, Spain
- Morphosis Architects, from the USA's Santa Monica, California
- Anttinen Oiva Arkkitehdit Oy, from Helsinki
- Arkkitehtitoimisto Lahdelma & Mahlamäki Oy, from Helsinki

If a design team outside Finland wins the competition, the team has to have a Principle Designer as required by law (Architect of Record) with good knowledge of Finnish law for further planning.

2.4 Prizes

Each design team submitting appropriate documents shall receive €50,000 (0% VAT).

2.5 The competition jury and specialists

- From Aalto University Properties Ltd
Managing Director Antti Tuomela
- From Aalto University
Vice-President Antti Ahlava, architect, SAFA
- From Senate Properties
Division Director Olavi Hiekka
- From VTT Technical Research Centre of Finland
Facilities Manager Taru Haimala
- From the City of Espoo
Director of City Planning and Urban Design
Ossi Keränen
- From the Alvar Aalto Foundation
Director Tommi Lindh, architect, SAFA

Professor Teemu Kurkela, Architect, SAFA, will serve as the architecture expert invited by the organiser.

The Finnish Association of Architects has appointed Artist Professor Sari Nieminen, Architect SAFA, to the competition jury as the entrants' representative.

Technology Student Pyry Hahtela represents the student organisations.

The external specialists are:

Director Kari Talvitie,
Aalto University Properties Ltd

Property Development Manager Olli Kantanen,
Senate Properties

Architect Antti Uusitupa,
Espoo City Planning Department

Housing design:

Project Development Manager Kati Soini,
Sato Oyj

Traffic design:

Senior Consultant Seppo Karppinen,
SITO

Costs:

Arto Palo, M.Sc. (Eng.), and
Tapio Holopainen, engineer

In addition, the National Board of Antiquities will assess the integration of the design into the cultural environment.

The experts will not be involved in the actual decision-making, but they are entitled to participate in the meetings of the competition jury and the executive committee, and they will be asked for an expert statement on the competition entries.

Eija Larkas-Ipatti, Architect, SAFA, from Ramboll CM Oy, will act as Competition Process Expert and the secretary of the jury.

2.6 Competition schedule

The competition will begin on 15 June 2016 and end on 15 November 2016, with the scale-model deadline being 29 November 2016. A kick-off meeting for the entrants will be held in Otaniemi on 22 June 2016 and another meeting, if necessary, on 12 September 2016.

3. Technical Competition Information

3.1 Competition documents

The competition documents include this competition programme and its appendices:

1. The borders of the competition area (with the lime-tree lane to be preserved and the part of the Material Science and Engineering building to be demolished marked)
2. a) The town structure plan, 1:5000 PDF and DWG files
b) Map of green areas
c) Tree stand
3. A city plan map, 1:2000 PDF
4. Explanation of the most important city map plan symbols
5. A base map, 1:2000 PDF and DWG files
6. Otaniemi's transport network
7. The plan for the square at the north-east end of Vuorimiehentie
8. A pipeline and cable map
9. Drawings of the block's existing buildings
10. A short report of the buildings in the competition area and neighbourhood
11. Facades of the most important neighbouring buildings
12. Space programmes

3.2 Competition Web site

All material will be available at the Web site <http://aaltocre.fi/mountainman/>. The Competition Programme and the most important appendices will be available as of 15 June 2016.

3.3 Submission of questions

The competitors may submit questions and request additional information in two stages: until 12 August 2016 (stage 1) and until 12 September 2016 (stage 2) by sending e-mail to eija.larkas-ip-atti@ramboll.fi.

The questions and answers will be presented anonymously for all competitors via the Web site by 26 August and 26 September 2016.

3.4 Publishing of the results, and exhibition of the entries

The jury aims to make its decision by the end of December 2016. The results (the winner's pseudonym) will be immediately announced to the competitors. The results of the competition will be announced at a separate prize ceremony.

The result will also be published in the journal *Arkkitehtiutiset* and to be announced separately via media. The entries will be available at the Web site and in Otaniemi, in a location to be announced later, for two weeks.

3.5 Further actions

The jury will present its recommendation for further action on the basis of the outcome of the competition. Aalto University Properties Ltd and Senate Properties will be responsible for further design,

while the Aalto University Student Union, the Association of Economics Students in Helsinki, and the Teknologföreningen student organisation will be responsible for the design of the student centre and student housing.

The idea is that the winner of the competition will be commissioned to design the city plan for the block and the plan for one of the buildings. However, winning the competition will not automatically lead to a commission.

3.6 The right to use the competition entries

Competition entries shall remain the property of the organiser. The authors shall retain copyright to their entries. The design team that is awarded the potential commission is entitled to use ideas and designs from other entries in accordance with the Finnish Copyright Act. Design copyright shall remain with the author of the competition entry.

3.7 Returning of competition entries

The competition entries shall not be returned.

3.8 Insurance for competition entries

The organiser of the competition shall not insure the competition entries.

3.9 Competition rules

The competition is arranged in accordance with Finnish law, the competition programme, and the competition rules of the Finnish Association of Architects.

3.10 Competition language

All competition documents shall be prepared in English.

4. The Competition Area

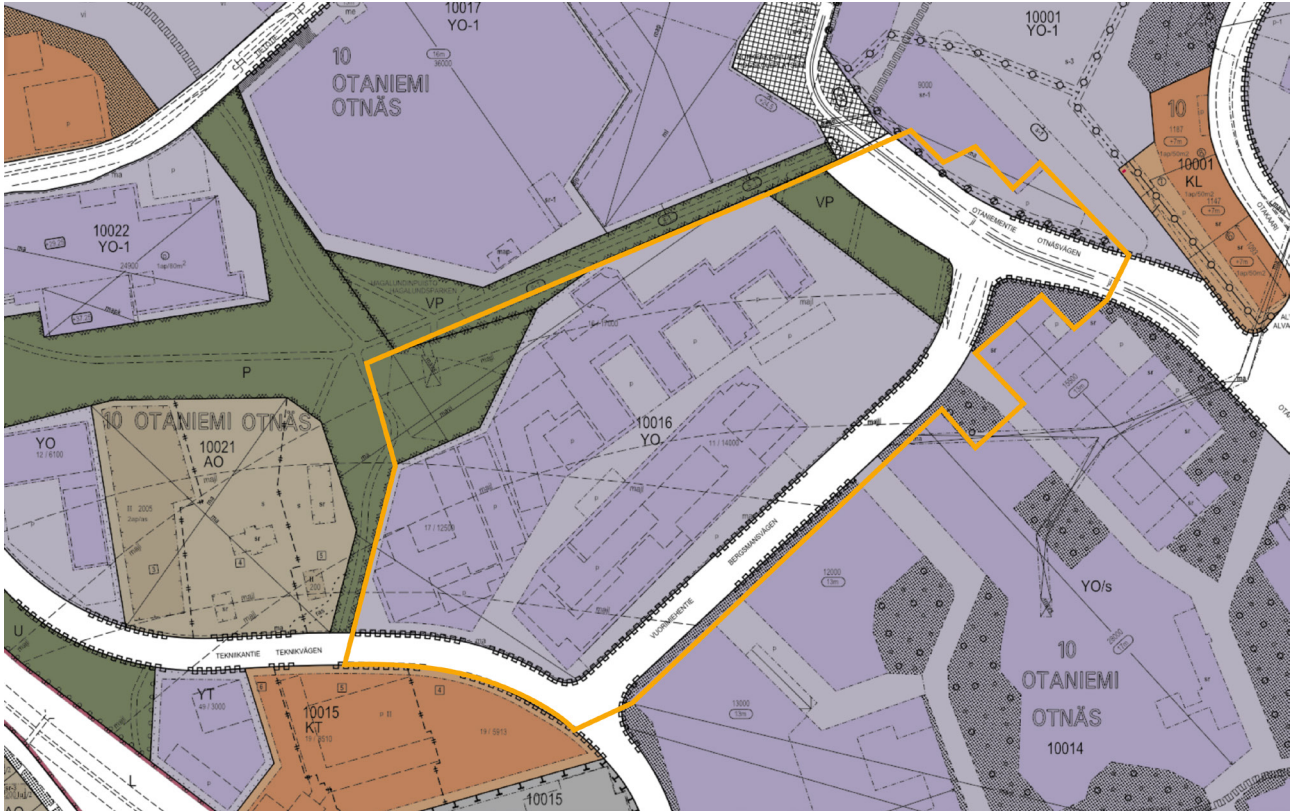


4.1 The competition block – 10016 ‘Mountain Man’

The competition block is located at the original centre of the campus. The blocks along Vuorimiehentie have been built in stages, which has resulted in teaching, research, and administrative buildings that reflect the construction procedures and the architecture of different decades. Initially, Vuorimiehentie was designed as a main access route to Otaniemi, but in the course of building of the area it has been transformed into a connecting road within the central portion of the campus.

Buildings located adjacent to the competition block include Väre, the new building for the School of Arts, Design and Architecture, the Learning Centre (former Aalto University library), designed by Alvar Aalto and completed in 1969; and both the older and the newer facilities of VTT, the Technical Research Centre of Finland. The West Metro line is to be opened in August 2016. Otaniemi’s station will have a connection at Väre’s location.

The objective is to design the Bionova centre of excellence in bio-economy research unit, office premises and Students’ Community Building for student organisations, housing and student housing.



4.2 City planning for the block

Pursuant to the current city plan, the competition block 10016 is formed of buildings that house teaching and research activities. In addition, the competition area includes two relatively small park areas and a square at the north-eastern end of Vuorimiehentie.

The contents and requirements of the competition programme will require changes to the city plan.

4.3 Feasibility for the block

In the south-eastern part of the area, buildings' foundations can be laid on rock. On the low-lying ground in the north-eastern part of the area, pile foundations are required.

4.4 Nature values of the block

The competition area is bordered by the lands of the former Hagalund Manor. There is a protected lime-tree lane leading to the Manor on the north-west edge of the competition area (the Hagalund Manor and the lime-tree lane are marked on the map of the competition area).

The area south-west of Vuorimiehentie and Otaniementie, designated as park area, (marked with 'VP') currently consists of fairly even grassy ground and some individual deciduous trees in the north-western area, along with a group of pines that constitute a notable scenic feature and provide verdure in winter. North of the pines, there is a group of poplars. Apart from a slope of considerable scenic value with glacial erratic boulders and pines, located near Otaniementie (marked on the map), the area contains no features of notable nature value.

4.5 Current traffic arrangements

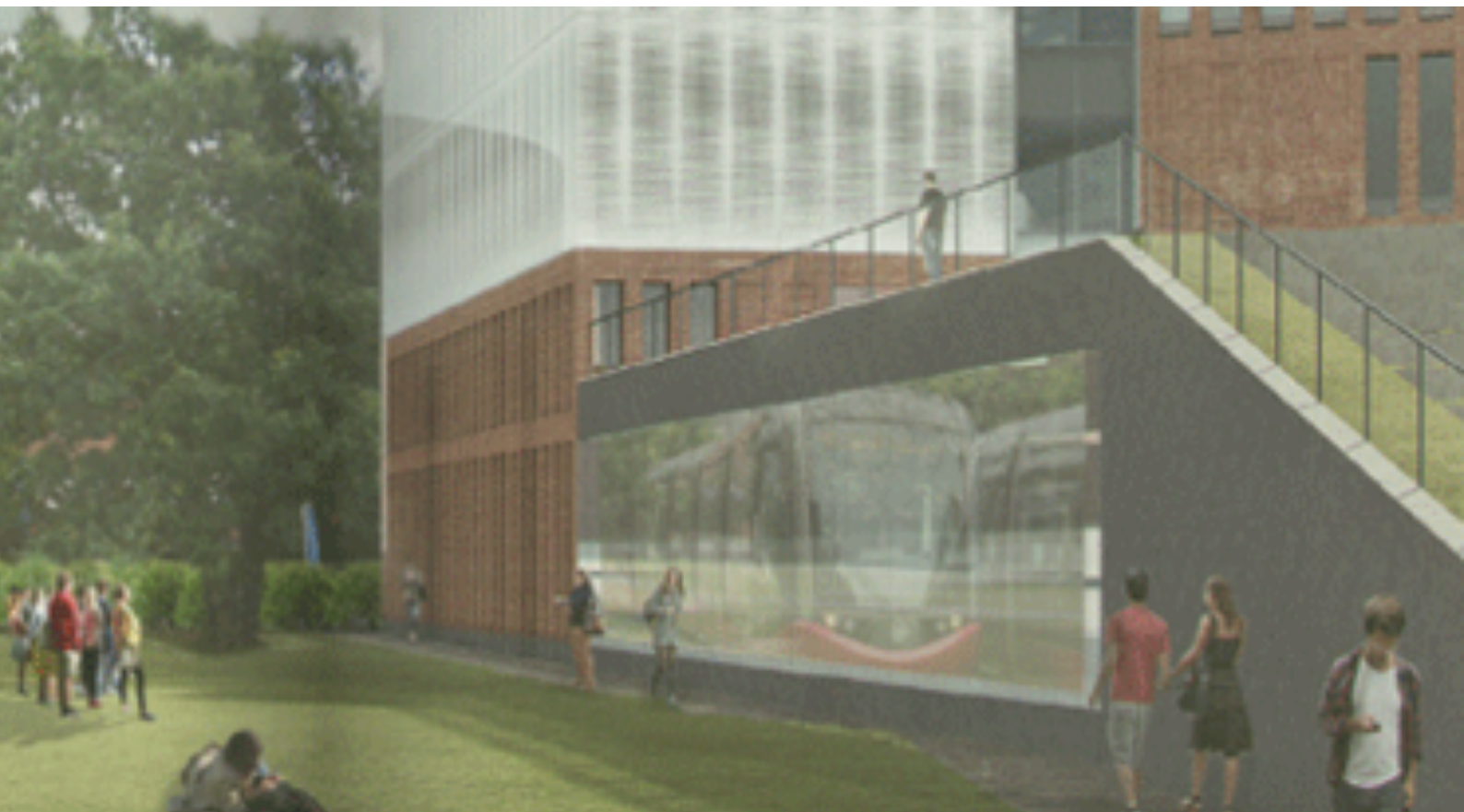
In the development of the area's traffic arrangements, the emphasis is on public transport and on bicycle and pedestrian traffic. The competition area is at an important hub for public transport and cycling routes.

A metro line from Helsinki to Matinkylä will begin operation in August 2016. The main entrance to the Aalto University – Otaniemi metro station will be located in the Metro Centre, which will also house commercial services. It will be linked to Väre, a new building to be constructed on a plot adjacent to the competition area. A light-rail

connection (Raide-Jokeri) to be built from eastern Helsinki to Otaniemi and Keilaniemi, via the Lepävaara centre, is planned for the near future. One of its stops will be located south of the Learning Centre, in front of the competition area. In addition, two bus lines running along Vuorimiehentie will serve Otaniemi.

The goal is to make the centre of the Otaniemi campus a pedestrian zone, which is why passenger traffic is not allowed on Otaniementie. This constitutes a significant change from the previous situation.





5. Design Goals

5.1 General remarks

The following objectives guiding design are directive and creative leeway is reserved for those submitting entries to the competition, with regard to the emphasis and contents of the competition entries.

The starting point for the overall design of the block is to complement the existing building stock and to add variation to it. Linked buildings bordering the street, while not typical of Otaniemi in general, are a reasonable solution in this area. The area is a mixed-use development on the level of both the block and individual buildings.

The ground-level floors should be designed as open public or semi-public spaces that can be transformed from work spaces and offices into commercial premises and shops. In student housing, the ground floor will feature club rooms with open frontages that foster communal living.

In the vicinity of the Learning Centre, the building height should remain relatively low. Buildings may be higher in the south-western part of the area if the competition entrant considers this the best solution. However, the centre of Otaniemi is not an appropriate location for high-rise buildings.

The competitor should also consider a building's materials and details in relation to the solutions applied for the architecturally valuable buildings already found in the area. The choice of materials should be based on the recognition of materials traditionally used in Otaniemi and compatibility between the old and new materials. New architecture must match the existing, historically valuable buildings in quality. All materials must stand the test of time.

The premises must be adaptable to various uses, now and in the future.

5.2 The competition area's sections

The competition area is preliminarily divided into three sections, but the entrant may determine the exact locations of the boundaries separating these sub-areas. For appropriate reasons, the entrant may make changes to this division.

- A This is the key section in terms of the cityscape, with a series of public buildings located in the area. This area will be the round-the-clock centre for student activities. In the A area, housing shall not be figured prominently in the cityscape.
- B A significant area with regard to the cityscape, this section will contain Bionova, the centre of excellence in bio-economy. Some of the existing buildings will be demolished to make way for this research facility (the building sections to be demolished are marked on the map of the competition area).
- C An important area with regard to the cityscape, section C will have both rental and owner-occupied housing. Well-designed housing will also serve as a pull factor in attracting international researchers and visitors to the Aalto University and VTT. This section will continue to house VTT's functions, and the connection to the underground research facility will remain too. This section also has scenic value. The old buildings of the Hagalund Manor and the neighbouring forest's edge, which is to be preserved, are located in this area.

In addition, student housing will be designed for the area in accordance with the guidelines to be provided later. The area's student centre and student housing must complement each other.



- Also this subarea should be more condensed and built-up environment than the present Otaniemi. Building to a certain height can be considered. We do not recommend protruding balconies on the street side.
- A kindergarten serving the new dwellers can be located, for example, in the ground floor of a multistorey building.

5.3 Commercial services in the area

Restaurant services are in extremely high demand in Otaniemi, but once the newly renovated premises at the shopping centre and the Metro Centre open to the public, the services will be able to meet demand until 2020, if not longer.

After completion of the Metro Centre, grocery retail services will be able to meet demand until 2020, when the new building projects will be com-

pleted. Before this, the area will not have enough potential customers to support a larger number of supermarkets.

The competition entries may, however, include business premises to be built later. The cost of these premises will not be taken into account in the assessment.

5.4 Traffic arrangements

5.4.1 Pedestrian and bicycle traffic

A high-quality bicycle route will be built along Otaniementie, which runs along the edge of the competition area. The lime-tree lane on the north-western edge of the competition area will serve as an important bicycle and pedestrian route between Otaniemi and Tapiola. The plan is to develop high-quality pedestrian and bicycle routes within the area, along with the routes to Keilaniemi along

Metallimiehenkuja and Betonimiehenkuja and under Karhusaarentie. As the Ring Road I (Kehä I) will run in a tunnel in the area of Hagalundinkallio, transport connections between Otaniemi and Tapiola will improve and these districts will be linked in a natural manner. The promotion of cycling also requires high-quality facilities for storing bicycles.

5.4.2 Public transport

The competition area is at an important hub for public transport and bicycle routes. The main entrance to the Otaniemi metro station will be located at the Metro Centre, situated next to the competition area. It will also house commercial services. A new light-rail link will be built through the area, running from Keilaniemi, in Espoo, to Itäkeskus, in Helsinki. This Raide-Jokeri line will be Helsinki's first light-rail connection. It is designed to run mainly on its own track, separate from other traffic, which will ensure rapid and stoppage-free travel for the trains. The commencement of construction is planned for 2018.

5.4.3 Passenger traffic and parking

Appendix 6 presents the transport network as it will be once a tunnel has been built for Kehä I in the Hagalundinkallio area. The work on the Ring Road I tunnel is intended to begin in 2020.

Keeping vehicles from driving along Otaniementie in the vehicle-free campus area will considerably change passenger-traffic arrangements. Tekniikantie and Tietotie will provide access from Ring Road I to the western part of the campus centre. The eastern part will be accessible from the Maarinsolmu interchange via a new road to be built above the tunnel and then along Tekniikantie and Vuorimiehenentie.

The north-eastern edge of the competition area will have an access road for cars dropping passengers off at the Otaniemi metro station's main entrance, plus 5–10 parking spaces for these vehicles.

A parking facility for about 200 cars will be built in the area, serving both residents and facilities.

5.5 Green-area planning

In Finland, seasonal variation has a strong impact on the environment: the landscape is vibrant in summer but barren in autumn and winter. The design solutions must contribute to the survival of the lime-tree lane, which is affected by lighting conditions and the proximity of built structures.

The designs should also take into account the continuous parkland zone in the area, as this should remain in some form in the further plans. In terms of landscape, the Hagalund Manor's forest at the edge of the block is the most valuable feature in the area.

The park area in the north-eastern part of the competition area contains sparse woods. It is recommended that the park area be developed into a high-quality recreational green space. If possible, the group of pines should be preserved (it is marked on the map of the competition area).

5.6 Ecological sustainability (evaluated especially for Bionova)

An ecologically sustainable environment will meet the needs of the area and its users in the long term, while taking into account sustainability. The competition entries must optimize any negative impacts brought by construction, promote users' well-being, and meet the changing needs of the area and its users. Under the building regulations, all state-owned buildings must be nZEB structures by 2018, while all new buildings must reach this status by the end of 2020.

The designs should apply energy-efficient solutions that adhere to the nZEB (Nearly Zero-Energy Buildings) approach. The solutions presented should optimize energy conservation through passive measures. The massing, the number and direction of openings, and protection against sun should be designed to optimize the need for heating and cooling. Technical building services should adjust to the actual use and to changes in internal conditions.

In addition, the entries should present the most cost-efficient renewable-energy solutions that are applicable.

- a) The design of the premises, the community's and users' space requirements must be taken into account, and changes to these needs should be anticipated, to ensure efficient use and a high utilisation rate for the premises.
- b) The choice of the main materials must be based on the optimisation of elements such as durability, recyclability, local origin, small carbon footprint, and reduction of other environmental impacts.
- c) The existing energy sources and network should be utilised (district energy networks, heat loads within buildings and in their vicinity, and networks for renewable energy).

The LEED rating system will undergo considerable changes next autumn, when its version 4 comes into effect. The LEED system may be used to guide the design, to achieve the Gold level, buildings must not only be energy-efficient but also have the following properties:

- Opportunities to maximize the amount of open and green areas
- Extremely efficient water fixtures or the utilisation of rainwater in water fittings
- High-quality indoor air and the possibility of controlling indoor conditions individually
- LCA calculations for structures and careful choice of materials
- Bicycle storage facilities near the entrances, along with limited parking spaces and charging points for electric vehicles

No environmental certification will be sought for the Student's Community Building or student housing, and no solutions to meet the requirements of ecological sustainability that increase life-cycle costs are feasible.

5.7 Target costs

A target cost will be calculated for the buildings on the basis of room programmes, plot conditions, and the objectives set for the building, and the construction cost estimated on the basis of the entry will then be compared with this target cost. The target cost is for offices €2,500 per m² gross floor area, and for laboratory premises.

4,000 per m² gross floor area.

6. Design Guidelines

6.1 Buildings located in block 10016

The appendices include information on the existing buildings in the competition block and their plans. These buildings are Aalto University Material Science and Engineering Building, Vuorimiehentie 2 (1.1), the Laboratory and Office Building, Kemistintie 3 (1.2) and Aalto University School of Chemical Technology, Kemistintie 1 (1.3).

The south wing of the Material Science and Engineering Building will be demolished.

The Laboratory and Office Building, Kemistintie 3, used by VTT, was completed in 1987. When this building reaches an age at which it requires extensive renovation, it may be demolished to make way for housing, which would include VTT office premises for around 200 employees on the ground floor. The lift to the underground research facility must be preserved.

The premises Aalto University School of Chemical Technology will remain unchanged. Its courtyard that currently serves as a car park will be developed into a recreation space or used for construction.

6.2 New buildings to be designed

Space programmes are presented in appendices 12.

The following floor-area distribution among projects A–C is preliminary and may be changed to suit the overall solution.

A The Students' Community Building

(gross floor area of approx. 5,000 m²) and student housing (gross floor area of approx. 4,000–6,000 m²)

The Students' Community Building shall be used by three student organisations. The student organisations will be responsible for the construction and cost of the building, which must be taken into

account as one of the main criteria in the design of the life-cycle costs.

The building shall also house a student canteen. Preferably, the catering and service facilities are to be placed on the ground floor where they will be easily accessible. Street level milieu should be of a vivid character.

B Bionova

The Bionova development is intended as an investment, and some of the premises will be sold to a third-party property investor, making cost-efficiency an important consideration.

The Material Science and Engineering Building to be preserved, with a gross floor area of 5,500 m²

- The southern end of the existing Material Science and Engineering building houses strategically important materials engineering laboratories (1/3 of the floor area). The logistic connections to the existing entrances must be preserved.
- The northern end of the building contains office premises for three or four operators (occupying 2/3 of the floor area).

The Bionova building to be built, with a gross floor area of 23,500 m²

- **7,000 m²** of strategically important bio-economy laboratory facilities are to be planned for the southern end of the Bionova building. Access to Vuorimiehentie and Tekniikantie is required for logistic services. These laboratories require enhanced air-conditioning but do not need increased ceiling height.

The target cost for these laboratory premises is €4,000 per m².

- The northern end of the building will house approx. **15,000 m²** of office premises for

various users (a multi-tenant office for 1,000 to 1,100 people). These premises will be designed on the second floor and up.

The target cost for these office premises is €2,500 per m².

- The ground floor or first floor of the office area will contain open-fronted 'open innovation' premises with a floor area of **1,500 m²**, including a restaurant, café, and bioeconomy showroom.

The tenant has requested that the above-ground parking to be situated in the immediate vicinity of the building.

The target cost for the parking facilities here is €25,000– to 30,000 per parking place.

C Housing

Rental and owner-occupied flats with a total gross floor area of 25,000–35,000 m² will be planned for the housing area. This figure includes student housing, with a gross floor area of approx. 4,000–6,000 m².

The criteria for housing design are the following:

- The ratio between rental and owner-occupied flats must be 50/50
- The average size of the rental flats should be approx. 40 m²
- The average size of owner-occupied flats should be approx. 61 m²

Rental housing

Type of flat	Area	Proportion of flats
Studio	24–28	35 %
1 bedroom	38–45	45 %
2 bedrooms + sauna	56–63	15 %
3 bedrooms + sauna	70–80	5 %

- In section C, residential buildings should not have commercial business premises on the ground floor but small offices are requested
- All flats must have a balcony or a French window
- The design solutions must be cost-efficient

The proposals must include floor plans for each flat type.

Because the VTT building will remain in use for some time, the residential area should be designed to be built in stages. It should also be noted that the northern edge of the area features an access route to underground research facilities, and the research hall's HPAC channel and smoke-extraction channel, which also serve as an escape route. The condenser area for the research hall's cooling system is located next to the escape route's entrance (marked in the drawings). The location of an access route to a small office occupied by VTT and the research hall shall be decided upon.

Student housing:

- Subsidised rental housing
- The majority of the flats should be small, with an area of 25 m²
- Some of the flats should be two-bedroom flats, suitable for flat-sharing, with an area of 45 m²
- No balconies are to be designed for these flats

Owner-occupied housing

Type of flat	Area	Proportion of flats
Studio	28–34	5 %
1 bedroom	38–50	40 %
2 bedrooms + sauna	60–70	40 %
3 bedrooms + sauna	80–90	15 %

- In section A, the buildings should only house functions that support communal living, such as club premises with open frontages
- The design solutions must be cost-efficient
- The selection criteria are the flats' efficiency and cost as well as attractive living environment and quality

6.3 Traffic arrangements

6.3.1 Pedestrian and bicycle traffic

A noteworthy pedestrian and bicycle route runs along the northern edge of the competition area, connecting the centre of the campus to the centre of Tapiola, via Silkkiniitty. Another pedestrian and bicycle route will begin between the Students' Community Building and Aalto University School of Chemical Technology, leading southward to Keilaniemi via Metallimiehenkuja. A pedestrian and bicycle route marked on the present city plan will remain between the planning area and the Hagalund Manor.

An open square will remain in front of the Learning Centre at the north-eastern end of Vuorimiehentie. The design of this square and its plants is part of the competition task. Stops of the light-rail link to be built through the area are shown in Appendix 7. On the edge of the competition area and the square, parking space for 5–10 cars shall be reserved for dropping passengers off at the Otaniemi metro station's main entrance.

6.3.2 Public transport

There will be a light-rail stop south-west of the Learning Centre, in front of the competition area. The design of this square is included in the competition task.

6.3.3 Parking arrangements

All competition entries must include a parking facility with spaces for approx. 200 cars, most of them above-ground, which may later be replaced with a further building if the need for parking decreases.

In addition, 5–10 spaces shall be reserved for cars dropping passengers off at the metro station or Väre. The calculated need for parking spaces is greater, but approximately half of the residential parking spaces in the area will be in joint use with the offices and the rest of the required spaces will be built outside the competition area. In addition, the Learning Centre will require 30 parking spaces, which must be taken into account in the design of the square at the north-eastern end of Vuorimiehentie. These spaces should be in the open space at the south-eastern end of the building, which can be accessed from the south-east.

Parking spaces are not required for the student centre or student housing.

Bicycle space requirements are 1 space per 30 m² of residential premises and 1 space per 50 m² of office space. These facilities for bicycles must be of high quality. All the bicycle racks must be such that a bicycle can be secured by its frame, and at least 50% of the spaces must be protected from the weather.

6.3.4 Service traffic

Building maintenance shall be arranged in a manner that allows maintenance vehicles to access service areas without the need to reverse across bicycle or pedestrian routes.

6.4 Civil-defence shelters

Civil-defence shelter space will be in large, joint units, and the entrants are not required to designate such spaces.

7. Assessment Criteria

7.1 General assessment criteria

- A high-quality cityscape and functional solution for the block entity
- Cost-effectiveness
- Blending of new development with a cultural environment of national significance, alongside adaptiveness of the design to the existing environment and both reinforcement of its characteristics and creation of new features
- A cityscape that is vibrant, diversity-rich, unique, and attractive
- A living cityscape and the promotion of encounters all year round
- Meeting of functionality requirements and displaying of good architectural values and innovation
- Serving as a residential–office hybrid solution
- Designing spaces for open innovation
- Adaptability to changing space needs, including flexibility in the construction stage
- Squares, green zones, bicycle and pedestrian routes, and human scale
- Appropriate parking arrangements

7.2 Assessment criteria for specific buildings

The Students' Community Building

The way the student centre opens to the street, the level of accessibility of its public areas, and the relationships between various spaces

Bionova

Usability and cost- and space-efficiency

Housing

The possibility of building the housing in stages, the efficiency of the room plans, liveability, and views from the windows

Student housing

Liveability and efficiency of the room plans, along with the number of residents that can be accommodated

Parking

A cost-efficient parking solution of high quality

The overall solution and potential for further development, rather than details, will be emphasised in the assessment.

Slight deviations from the instructions given do not automatically lead to the disqualification of the competition entry.

8. Entry Guidelines

8.1 Confidentiality

All competition documents are to be **submitted under a pseudonym selected by the competitor**. All drawings shall display **scale markings**.

Each submission shall include a closed envelope marked with the pseudonym, containing the pseudonym associated with the entry and the designer's name and contact details. The information shall include the name of the copyright-holder and the names of possible assistants.

8.2 Required documents

1. A town structure plan for the area, 1:5,000

The town structure plan shall show the new buildings, transport connections (roads and pedestrian and cycling routes), and green spaces in the competition area and their links to other green areas in Otaniemi.

2. A site plan, 1:1,000

The site plan shall indicate the elevation and numbers of storeys for each building volume, the pedestrian and bicycle routes and green spaces, as well as parking arrangements.

3. The façade of the Vuorimiehentie block, 1:1,000

4. Floor plans, 1:400 and, when necessary, 1:200

All the floor plans and parts thereof that are essential for the competition, such as the most important sets of spaces, flat types, or other elements selected by the competitor, shall be presented at a scale of 1:200.

The floor plans shall include at least the names and floor areas of the spaces and the preliminary design for the furnishings, when necessary.

5. Façades and cross-sections, 1:400 and, when necessary, 1:200

Façades (min. 4 off) and cross-sections (min. 4 off) that are essential for the assessment shall be prepared at a scale of 1:400. The drawings must indicate the main materials used.

6. The square at the north-east end of Vuorimiehentie

The plan shall show the arrangement of elements for the square (the light-rail service and its stops, bicycle and pedestrian zones, surface materials, and any shelters and furniture). In addition, the design shall include a transport route to the metro station and Väre, plus parking (drop-off) spaces.

7. 3D views

The competitor shall present at least two illustrative outdoor views and one interior view.

8. A scale model, 1:1,000

A scale model of the competition area shall be produced at a scale of 1:1,000. It is to be prepared as a white mass model.

The organiser will provide all the competitors with a model template of the competition area, which will contain the existing buildings or parts thereof that are to be preserved.

9. The summary report

The summary report shall indicate the main principles and materials applied in the solution. It shall also specify the number of storeys and the area figures for the buildings: the gross floor area, the number of flats, the useful floor area, the number of flat types, and the average floor area for each type.

The text of the report shall be attached to the presentation boards and also, as a separate A4 printed version, to the submitted documents. It shall also be included with the electronic material, as a PDF file.

Other required material

- The entries shall be submitted in electronic format on a CD-ROM or a USB flash drive, with the pseudonym associated with the entry clearly indicated. These files shall be in PDF form, with a resolution of 300 dpi. The electronic material shall also include, with clear labelling, the documents that are to be published on the competition Web site after the result has been announced (the general layout plan and two 3D images).
- For the cost analysis, two folded sets of general layout plans, floor plans, cross-sections, and façades are to be submitted, at the above-mentioned scales. The report may be submitted in electronic form.
- The entry material in its entirety shall also be provided as a series of presentation boards at a smaller scale (A3) that can be copied (these shall not be stapled). A linear scale shall be displayed on the drawings.

8.3 Presentation

The entry material shall be affixed to stiff, vertical boards in A1 size (594 × 841 mm). The maximum number of presentation boards is 10. The entrant must ensure that the material does not include the name or other details of the designer (this is particularly important for the electronic material).

9. Submission of Entries

The competition ends on **15 November 2016**, and the deadline for scale models is **29 November 2016**. The entries should be marked 'Mountain Man' and reach **the address below** by 4:00pm on the due date or be sent as an express delivery via the postal service or a similar transport service no later than that date. The date must be evident from the shipment, and the entrant must be able to prove its validity if necessary.

See also <http://campus2015.aalto.fi/en/>.

Each entrant is permitted to submit one entry only.

Aalto University Properties Ltd
Lämpömiehenkuja 2 A
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15 June 2016

The competition jury

