

## REPORT OF THE COMPETITION JURY



### **CHEMIST'S BLOCK KEMISTIN KORTTELI OTANIEMI**

**INTERNATIONAL INVITATIONAL ARCHITECTURAL DESIGN COMPETITION**

15 June – 15 November 2016

Continuation Phase: 26 January – 13 March 2017



NEXUS2

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# 1. Competition Assignment

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## 1.1 Competition organiser, nature, and purpose

Aalto University Properties Ltd and Senate Properties organised a competition whose purpose was to generate a comprehensive solution for a new, high-density urban environment expressing a vibrant, unique, and high-quality cityscape with new buildings and functions that would create a supportive environment for state-of-the-art research, living, and interdisciplinary interaction in one of Otaniemi's central blocks.

Bionova, a new centre of excellence in bio-economy designed for the VTT Technical Research Centre of Finland Ltd, would also function with the existing buildings.

A new Students' Community Centre was to be designed for student organisations; the Aalto University Student Union (AYY), the Aalto University Business Students (KY), and the Swedish-language student organisation Teknologföreningen (TF) provided programmatic input whose objective was the creation of an interdisciplinary meeting place and student activity centre close to student housing.

The competition block will also provide housing for people working and living in Otaniemi.

Another competition objective was to find one or more designers for the new buildings. The intent was to commission the winner of the competition to design the town plan for the block, as well as one of the buildings.

## 1.2 Form of competition, competition rules

The competition was arranged as an international invited architectural design competition according to the rules of the Finnish Association of Architects (SAFA).

## 1.3 Competition language

All official documents had to be written in English.

## 1.4 Invitees

The following design teams were invited to participate:

- Estudio Herreros, Madrid, Spain
- Morphosis Architects, California, USA
- Anttinen Oiva Architects Ltd, Helsinki, Finland
- Architects Lahdelma & Mahlamäki Ltd, Helsinki, Finland

## 1.5 Prizes

Each design team received EUR 50,000 (0% VAT).

## 1.6 Competition Jury

Representing Aalto University:

- Vice-President, Professor Antti Ahlava, Architect, SAFA, Chairman

Representing Aalto University Properties Ltd:

- Managing Director Antti Tuomela

Representing Senate Properties:

- Division Director Olavi Hiekka

Representing the VTT Technical Research Centre of Finland Ltd:

- Facilities Manager Taru Haimala

Representing the City of Espoo:

- Director of City Planning and Urban Design Ossi Keränen

Representing the Alvar Aalto Foundation:

- Director Tommi Lindh, Architect, SAFA

Professor Teemu Kurkela, Architect SAFA, served as the external expert invited by the organiser.

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

B.Sc. (Tech) Pyry Haahtela represented the student organisations.



**External experts:**

Director Kari Talvitie,  
Aalto University Properties Ltd

Property Development Manager Olli Kantanen,  
Senate Properties, until 30 November 2016

Property Development Manager Emmi Sihvonen,  
Senate Properties, from 1 December 2016

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, Civil Engineer

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

The external experts were not involved in the  
ranking of entries.

## 2. Competition Data

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### 2.1 Design goals

In a national inventory (RKY 2009) prepared by the National Board of Antiquities, the Otaniemi campus area is classified as a nationally important cultural and historical built environment, one of the register's selected locations that provide – regionally, temporally, and generically – a diversified overall picture of the history and development of Finland's built heritage.

The site of the competition, Kemisti ("Chemist's Block") is located close to the core of Otaniemi formed by a square framed by the Undergraduate Center (former main building, Alvar Aalto), Learning Center (former Library, Alvar Aalto) and Väre, the Aalto University School of Arts and Design, currently under construction. The goal is to implement the block as a compact urban milieu.

Mixing functions on the sites and in buildings to form workable and amenable frameworks for social encounters and working was one of the competition's objectives. Materials had to be used efficiently and facilities had to be easily adaptable to meet changing future needs. Phased construction had to be possible on residential sites.

Building heights had to remain moderate near the Learning Centre but could increase in the southwestern direction according to each competitor's judgement.

For decades, building construction in Otaniemi has been extremely spread out. During the summer, lush vegetation has visually linked the dispersed low-rise buildings whose functions have been, however, inconveniently separated.

Opposite the Learning Centre in an important cityscape location, the Students' Community Centre will continue the series of existing and future public buildings. Student housing can be built in connection with the Students' Community Centre, but its overall appearance should be that of a public building.

An important assessment criterion in the competition programme related to the required compliance with all construction-related cost targets. The life cycle economy of the buildings' outer skins is important for all building types. Construction costs for office buildings as well as housing should be low enough to ensure that the yield invested in construction will meet investors' requirements. When formulating construction and lifecycle costs, competitors had to consider that the student organisations themselves will be responsible for the financing and construction of the Students' Community Centre.

Vehicular traffic volumes will decrease substantially when the Metro becomes operable; light traffic will eventually predominate in the core area now under construction. The promotion of cycling also requires the arrangement of convenient parking facilities for bicycles.

A sample car parking solution was also presented in the competition programme; cost-effectiveness was the point of departure.

## 2.2 Assessment criteria

### 2.2.1 General assessment criteria as originally stated in the competition programme:

- 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

### 2.2.2 Assessment criteria for specific buildings as originally stated in the competition programme

#### Students' Community Centre

- 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 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 merits of the overall solution and its potential for further development were considered more important than the flawlessness of details.

### 3. Progress of the Competition

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The competition began 15 June 2016 and concluded 15 November 2016; scale models could be sent by 29 November 2016. An initial meeting, as well as a tour of the competition area and its surroundings, was organised in Otaniemi for the invited working groups on 22 June 2016. All offices were represented at that time.

Competitors could also present questions or supplementary requests regarding the documentation in two phases. Certain competitors participated in a second visit to the competition area, presented as an option, on 12 September 2016.

All entries arrived on time and contained the required materials.

The competition had its own website, <http://aaltocre.fi/mountainman/>, through which questions and answers were transmitted.

After the initial meeting, the Competition Jury convened 3 times during the competition's preparation phase, once during the competition phase, and 4 times during the assessment phase.

A single-phase competition had been the original intent.





## 4. General Assessment

### 4.1 General

Additional construction in the area is aiming at the creation of an attractive and vibrant environment using substantially larger site efficiencies than previously; the invited architectural competition has generated various alternatives as the basis for town planning.

The general planning of the block is a question of conceptual formation; how will future phase-wise construction be specified and how will the new buildings supplement the current situation? An extremely important part of building in an urban environment relates to the usage and accessibility of street-level facilities.

“Stray Dog” is based on a clearly defined wooded area bordered by new ribbon-like buildings that convey a powerfully dynamic image. In terms of their appearance and plan configurations, Bionova and the Students’ Community Centre are similar.

“Otaniemi Innovation Hub” organises building masses and the courtyards between them roughly perpendicular to Vuorimiehentie. The housing area is extremely dense.

“Nexus” is the only entry featuring a unified concept for the entire block: a varied combination of lower buildings progressing to higher structures. The advantage of the proposed dice-like elements is that excessively massive building volumes are not created in the area.

“EDGE” is based on the idea that each building blends with the closest milieu outside the competition area. That being the case, the block is confused and also unfortunately somewhat bland.

Besides its relatively low-slung red brick buildings, Otaniemi’s most important characteristic feature is a spread out forest park that imparts a garden campus ambience to the area. As stated previously, the campus has not, owing to its dispersed building configuration, been able to function as a vibrant meeting place.

The steering of future construction in Otaniemi was discussed by the Competition Jury. Certain members of the Jury were firmly convinced, also with respect to the categorisation of the design’s sites and zones specified in the “Aalto City General Plan” presented in the competition programme, that a master plan encompassing the entire Otaniemi area should be drawn up; it would specify, based on landscape and building inventories, those locations that would remain more loosely built as well as those locations that would tolerate higher construction efficiencies without compromising the nature of the built cultural environment. Certain other members of the Competition Jury believed that this kind of competition’s method of weighing the block’s construction at one time is appropriate.

An extremely sensitive planning grasp will be required, particularly at the block’s northeastern section, close to Otaniemi’s oldest core area. In their role as developer, the student organisations will shoulder a heavy responsibility regarding eventual formation of the highly significant architectural and spatial entity that will be formed opposite the Learning Centre.

#### **Innovation and creation of new features: vibrancy, diversity, uniqueness, attractiveness**

Most entries introduced innovative, unique, and attractive architectural features to Otaniemi.

Certain entries relied heavily on brick façades, apparently as a gesture of respect to the façade materials of the buildings in the area designed by Alvar Aalto. However, to enhance the diversity of the area and differentiate the most recent layer of design stratification from Aalto’s buildings, new materials would be welcome. The importation of new materials into the area should, however, be weighed in relation to those already in use. One solution in the selection of façade materials might be meshing: for example in the important location opposite the Learning Centre, the façades could be partially “inherited” and partially new.

## 4. General Assessment

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The entries displayed considerable variations in the architectural and cityscape ambiances imparted to the competition area. One proposal suggested a machine-like megastructure that emphasised dynamic structural components as well as the contrast between built-up and natural garden-like environments. Another entry created an easily approachable, cosy, and closely-knit matrix of buildings and open spaces. The two best entries combined a pedestrian scale approach with the creation of actively used public spaces facilitated by the scalability of their proposals.

### **Adaptiveness to existing environment, strengthening of relationship to historical context**

Regarding Otaniemi's "heredity" the terrain and wooded areas, as well as buildings, should be taken into account. Most of the entries recall fairly urban-flavoured city blocks.

The best housing solutions took the varied terrain into account and sensitively adapted the construction to a more intimate human scale. The excessively large masses presented in certain entries fail to support liveability and environmental diversity.

### **4.2 Cityscape and block scale**

The extensive variety of approaches ranged from a collage-like contextual diversity in which portions of the area echoed the architectural features of neighbouring areas, to the creation of a new and emphatically homogenous district whose sub-parts shared similar characteristics.

The creation of street milieus, the dimensioning and quantity of city squares, as well as the treatment of street corners proved to be challenging to the competitors, who often neglected to consider the comparatively small number of users in the area and the hierarchy of public spaces in the Otaniemi centre.

The square between the Väre building and the Undergraduate Center, eventually the hierarchically

most important square in Otaniemi, must be taken into account when designing public outdoor spaces. In particular, the distance between the Learning Centre and Students' Community Centre was excessive in certain entries, and too many of the large-scale and largely symbolic squares presented lack any actual use or relevance to daily life.

"Stray Dog" presents an almost completely paved square softened with small rectangular lawn areas. The gently curving stairs in front of the Students' Community Centre is an elegant motif echoing the Undergraduate Centre's outdoor amphitheatre. The parking spaces for 30 cars at the Learning Centre fail to do justice to Alvar Aalto's library building.

"Otaniemi Innovation Hub" presents a solution in which the planted parallelograms echoing the form language of the block's buildings become intermeshed with a paved area continuing from the Väre square. The generous quantity of tree plantings adheres to the spirit of Otaniemi. As designed, the Students' Community Centre has, however, been sited too far from the Metro station. The gap between the centre and the Metro station has been filled with separate canopies of timber construction. The 3D illustrative outdoor view demonstrates that moderate building heights are justified opposite the Learning Centre. The apartment building connected to the Students' Community Centre is too dominating at the height presented. Parking is well placed as a continuation of the Learning Centre's end façade.

"Nexus" is the proposal most faithful to the spirit of Otaniemi sought in the competition programme. It is also the only entry presenting a solution in which the Kemisti block's high-density construction does not place the Learning Centre, in the unenviable position of a low building overshadowed by higher-density construction. The Students' Community Centre could be shifted even closer to the Learning Centre because its podium building is so low. According to the presented shaping of the terrain, the Väre

square will retain its leading role. The parking area discretely located at the end of the Learning Centre has been successfully presented.

“EDGE” features lawn areas near the Learning Centre and on both sides of the tramline tracks; otherwise the area has been shown as paved. The orientation of the Students’ Community Centre has succeeded; space opens in the Väre direction. The curved tramline tracks appear to have clearly defined the Learning Centre as belonging to the “old” Otaniemi. Parking locations are divided into three areas. The northeastern corner of the site has also been proposed as a paved square, but the series of three sequential squares fails to implement the design principles of the Otaniemi centre.

A lack of differentiation among the buildings in the area may result in a feeling of excessive repetition, difficulties in orientation, and a detrimental effect on the maintenance of a human scale.

Even if interior sections of the block include service traffic, they require spatial definition.

Simple and compact building masses support sustainable construction, but many entries included excessively elongated and protruding masses.

Because buildings with different heights will be built at the Kemisti block, roofs, “the fifth façade” will require careful planning. Particular attention should be paid to the design of low buildings’ roofs as well as the grouping of their rooftop machine room installations.

### 4.3 Functions by building

Although the placements of functions for the most part complied with the objectives of the competition programme and were capable of further development in all entries, the desired spatial efficiencies could not be attained in, for example, buildings with full-height atriums.

Certain entries included horizontally-oriented buildings with a public podium section and a

private upper floor. This solution, often featuring glass-clad ground floor spaces facing streets, successfully supports a humanly-scaled street milieu and masks the actual size of the larger building masses.

Certain entries failed to comply with the competition programme’s square metre requirements.

The accessibility of commercial premises and the Students’ Community Centre at the crossing of Otaniementie and Vuorimiehentie is crucial in attracting customers and users. Only one entry accomplished this successfully.

Facilities accessible to the public at ground level have been presented in all entries’ street façades. Because student organisations cannot lease commercial premises to outside tenants, business premises should be located at Bionova’s northeastern end near the crossing of Vuorimiehentie and Otaniementie.

#### 4.3.1 Housing–office hybrids

Most entries presented mixed functions in buildings to support the idea of a hybrid block. This included mixing the Students’ Community Centre’s functions with housing, or housing with workplaces.

#### 4.3.2 Students’ Community Centre

Assessment criteria included accessibility to public facilities, connectivity between different spaces, and the fostering of a sense of community. The entry also had to facilitate the possible expansion of functions to their “own” sheltered outdoor areas.

The most important criteria related to, however, the Students’ Community Centre’s implementation costs that were exceeded in all entries.

## 4. General Assessment

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### 4.3.3 Bionova

Working in the preserved part of Department of Chemistry and Material Science must be possible during the entire construction phase. For this reason, solutions in which new construction is linked directly to the building (“Stray Dog” and “Otaniemi Innovation Hub”), or solutions requiring extensive alterations to the existing building (“Innovation Hub”), cannot be considered. Instead, connecting the new building to the Department of Chemistry and Material Science with a narrow bridge is recommended.

In the best entries, every part of a building had a direct connection to a central communal space within that specific building.

Owing to a limited construction budget, compact building masses were favoured.

Only a few entries avoided an image of monotony in Bionova’s façade by providing sufficient variety. The Competition Jury concluded that the façade facing Vuorimiehentie should not be too long, featureless, or continuous.

### 4.3.4 Housing

The competition site’s housing area is not large enough to support an excessive number of joint facilities.

Housing facing the courtyards of the Kemistintie 1 building proved unfeasible. Certain proposals included buildings too close to each other, or with excessive shadowing in courtyards.

A dramatic variation of window types on different façades, supporting calculated views and sustainable construction, was well considered in certain entries.

All entries in their present form were too expensive for a profitable rental investment. Admittedly, attractive and interesting, podiums, elevated walkways, and roof gardens are too costly for this area.

### 4.3.5 Student housing

The quantity of flats necessary per compactly-designed floor was a critical requirement.

From the students’ point of view, it was hoped that there would be a workable connection between the student flats and the Students’ Community Centre. Solving this competition task proved difficult.

In “Stray Dog”, student flats were placed at the other end of the block and connected to the Students’ Community Centre by an elevated walkway, a solution that failed to convince the Competition Jury.

“Otaniemi Innovation Hub” concentrated all student flats in the Students’ Community Centre, but the result was an excessively high building on a sensitive part of the site.

“Nexus” placed student flats between the wings of the existing School of Chemical Engineering, but this was not considered a satisfactory solution.

“EDGE” combined the Students’ Community Centre and student flats in the same building, forming a workable connection, but created six-storey high inappropriate building elements in this environment.

## 4.4 Open innovation premises

Certain entries placed the open innovation premises too far from the street, or they were too hidden.

#### **4.5 Cityscape, public spaces, internal light traffic connections**

Pedestrian and bicycle connections to the Metro station are crucially important, but certain entries featured excessively circuitous routes.

The crossing of Vuorimiehentie and Otaniementie is an important urban space; the best entries sited the building masses skilfully and emphasised the attractiveness, openness, and visibility of ground floor spaces. Terminating a crucial visual axis, the crossing of Tekniikantie and Vuorimiehentie plays a key role in the cityscape, but certain entries neglected to capitalize on this opportunity. By comparison, there were no special requirements for an enhanced cityscape ambience in the middle part of Vuorimiehentie.

In certain entries, there was an excess of purely decorative patches of vegetation placed in front of buildings. Lush greenery was viewed as being more appropriate for interior courtyards than for the streetscape.

Most of the entries successfully relegated parking areas to visually non-intrusive locations.

#### **4.6 Cost-effectiveness**

All entries were too expensive when compared to the overall target costs. In particular, features such as extensive glass façades, outdoor terraces, full-height atriums, roof gardens, curved façades, especially curved glass façades, protruding podiums, an excessive amount of corners, and swimming pools, raised costs unnecessarily.

#### **4.7 Summary**

All entries exhibited strengths, but also deficiencies; in their current form, none of the entries can be implemented.

# 5.1 Entry-Specific Assessments

## “Stray Dog”

### General

Exhibiting a firm overall grasp, the presented solution is an elegant megastructure-like work of art that is, however, sensitively set into the landscape. Bionova and the Students' Community Centre are visually the same building, attractively linked to each other by a grove of existing pine trees. The curved walls at the forest clearing emphasise the importance of its preservation. There is little town planning thinking in the entry: except for the housing, a monolithic structure-oriented architectural approach seems to have driven the design.

“Stray Dog” proposes the use of terracotta tiles a further developed version of the area's characteristic red brick façades, and respects the area's traditions by favouring relatively low buildings.

### Bionova

The large structure has been subdivided into smaller units with skylit courtyards extending through the entire length of the building to

facilitate flexible divisions into more compact units if necessary.

“Open Innovation Garden” combines the preserved Department of Chemistry and Material Science and the new Bionova under the same roof. The winter garden fostering social interaction is an elegant idea considering Finland's climate. Nature is brought into the building with trellises and plantings. Considering the selected form of implementation, in which private investors finance construction based on their desired yield requirements, a winter garden is impossible. For practical reasons as well, Bionova should be constructed separately from any existing building, linked only by a narrow bridge, because it must be possible to work in the Department of Chemistry and Material Science during Bionova's entire construction period. New installations were also recently carried out at the building's rooftop machine rooms, making any further reshaping of the roof economically untenable.

The laboratory-office facility combination is workable. Laboratory facilities on three floors





extend through the entire length of the building, with office facilities forming cells on the long façades. Laboratories placed in the centre of the structural frame receive daylight through vertical light wells extending up through the building, as well as a large skylit courtyard.

Although the entry contains commendable ideas for the implementation of energy economy, certain solutions function poorly in the northern climate. For example heat recovery with gravity air conditioning in the summer and mechanical air conditioning in the winter is proposed for the office facilities. During the summer, however, gravity air conditioning is ineffective because indoor and outdoor temperatures are essentially similar.

The building has been given the catchphrase: “tight in the winter and breathable in the summer”. “Cold night air” chilling concrete construction would cool interiors during the day. This could work in conditions where nights are cool, but when there are summer heat waves in Finland, the nights are often almost as warm as the days. In any case Finnish building codes require structural tightness.

The considerable quantity of commercial premises opening towards Vuorimiehentie successfully realise the objectives of the competition programme. In the form presented, however, the heavy-duty steel structures, wall bordering the sidewalk, and stairs impede the synthesis of indoor and outdoor space at street level.

### **Students’ Community Centre**

The building’s curved form, providing an elegant counterpoint to the Learning Centre, invites passers-by to sit on steps that function as the building’s podium. The narrow structural frame results in a substantial number of window places with external views; the proposed pedestrian path functionally splits the building’s ground floor into two parts.

The building is a single massive entity that is functionally challenging and stylistically too monumental for a Students’ Community Centre.

### **Housing**

Residential construction consists of two curved apartment buildings and one smaller rectangle-shaped structure. The VTT Technical Research

# 5.1 Entry-Specific Assessments

## “Stray Dog”

Centre of Finland’s working areas, a day-care centre for children, storage rooms, bathing facilities, and other related functions are located under the roof garden between the apartment buildings. For the most part, the working areas only receive daylight through skylights; considering Finland’s lighting conditions, however, this is not possible owing to the long winter season.

Flats are in hierarchically unequal positions depending if they have views to the forest or to the spaces between the buildings. Owing to the deck construction, no trees of any kind can be planted in the courtyards; any greenery would have to be underbrush and low shrubs on the ground surface.

Where the curved buildings are in close proximity at their point of inflection, certain flats, particularly those on the lower floors, receive insufficient daylight. Long corridors split the floors. The three-room flats form a long exterior wall that imparts an ambience of spaciousness. The flats’ plan configurations are no-nonsense; in the northern climate storage spaces for winter clothing are built in flats’ entrance foyers. Modular thinking facilitates the long-term adaptability of the flats’ plan configurations.

The substantial quantity of joint facilities on the apartment buildings’ lower floors is well-intentioned at the conceptual level, but in Finnish conditions finding an investor for this kind of construction might be impossible without the certainty of a long-term tenant.

The three-phase construction option is commendable, but the large units are challenging in terms of their implementability and phasing; in the overall scheme, the scheduling of the preserved lift and office connections may be difficult.

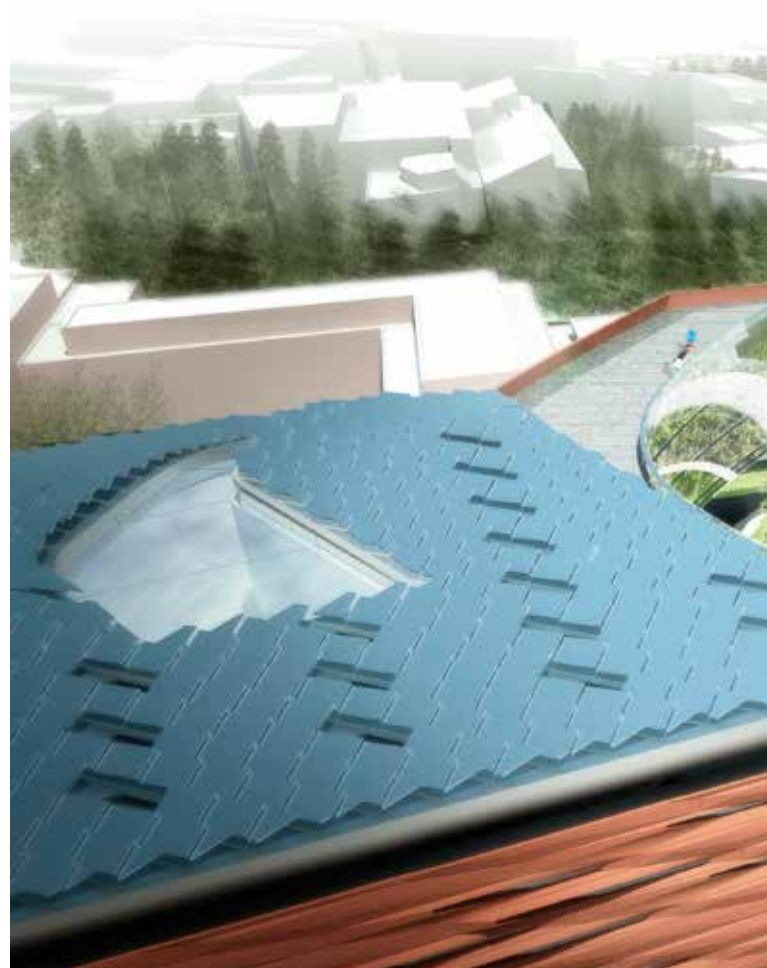
### Traffic

#### Pedestrian and bicycle traffic

- An elevated and roofed pedestrian traffic tube leads from the Students’ Community Centre to the housing area and onwards to Tekniikantie.
- The connection from the Metro station to Metallimiehenkuja passes through the main square.
- The shaping of the square does not support the route to Metallimiehenkuja.

#### Public transport

- Drop-off traffic for the Metro station and Väre has been located along Vuorimiehentie at a location planned as a bus stop, fairly distant from the Metro station and the entrance to Väre.





#### Parking

- Parking has been placed under Bionova and the planted deck at its western end. Vehicular access is from Vuorimiehentie and Tekniikantie.

#### Service traffic

- Service traffic for the apartment buildings and the existing School of Chemical Engineering is led inside the site along Kemistintie.

#### Emergency access routes

- Emergency access routes are partially lacking.

#### Cost-effectiveness

Implementing the project at the target price without substantially altering the design solution is particularly challenging.

#### Summary, “Stray Dog”

The entry is an architecturally controlled and somewhat futuristic interpretation of the harmony between nature and technology. A particularly strong feature is the patch of natural forest left as the heart of the site and attractively emphasised with curved building masses.



## 5.2 Entry-Specific Assessments

### “Otaniemi Innovation HUB”

#### General

The solution is based on the improvement of the site’s transverse light traffic routes. Bionova, the largest building entity, has accordingly been subdivided to form four outdoor spaces, the most important of which is the “Innovation Promenade”, which also facilitates the linkage of the cityscape to inner portions of the site.

New construction is anchored to the laboratory and office facilities of the preserved Department of Chemistry and Material Science. For their part, students’ meeting places, office facilities, and flats are linked to the same triangular-shaped podium building and the upper parts of the structure that dominate the site.

Progressing from the northeast in the low podium building are the students’ meeting places, auditorium, retail shop facilities, and parking facility. The overall town planning grasp is coarse grained.

The vacant area between the Students’ Community Centre and Metro station has been filled with curved canopies of timber construction.

The narrow-framed and corrugated apartment buildings are located at the western end of the site.

The entry’s written summary commendably draws attention to the fact that the dialogue between natural features and built elements must also be considered as the urban structure of Otaniemi becomes increasingly concentrated. The proposal is energised with ideas for the spaces between buildings, and the 3D illustrative outdoor views depict lively and amenable courtyard milieus.

The entry also takes a point of view on the School of Chemical Engineering situated outside the competition area because of the visually significant tree lane located at its northern end. The block’s internal pedestrian and bicycle routes have been carefully analysed, resulting in a proposed increase of transverse connections from Vuorimiehentie to the existing tree lane. Severing the preserved Department of Chemistry and Material Science at its ground floor facilitates the joining of the School of Chemical Engineering to the overall entity, thereby avoiding a scenario that would leave it in the “back yard”. Glazed and roofed pedestrian walkways between different





buildings have been proposed for a few locations. “Patios” in the yards of the existing School of Chemical Engineering have been developed as outdoor sitting areas suiting different parts of the year.

Urban-flavoured space in the centre of the site emphasises the site’s introvertedness, but has not been created parallel to Vuorimiehentie. One of the primary competition objectives is, however, a more urbanised ambience, specifically along Vuorimiehentie.

### **Bionova**

The presented solution is based on the assumption that the Department of Chemistry and Material Science could be altered to become part of the new Bionova building. This would require extensive demolition and change works, as well as the arrangement of temporary facilities, which is not an option. Because the existing building’s roof and machine rooms have also been recently repaired, demolishing the roof is economically untenable.

Office facilities can be organised as traditional cubicles or open landscape office areas.

### **Students’ Community Centre**

Student flats and the Students’ Community Centre are grouped around a triangular-shaped inner courtyard that works well as a setting for social interaction while covering a large bicycle storage hall. The spatial structure of the Students’ Community Centre is not easily differentiated from the adjoining office construction, but the amenable ambience of timber construction has been sought by opening it to a planted interior courtyard.

The stepped floors winding out to the courtyard is an elegant motif. The planting of large-sized trees presented in the drawings would require massive concrete planters. The wider stair levels also functioning as sitting places reinforce the perception that the plaza between the Learning Centre and the Students’ Community Centre, named the Alvar Esplanade in the entry, continues through the building.

## 5.2 Entry-Specific Assessments

### “Otaniemi Innovation HUB”

Owing to the selected block structure, the Students’ Community Centre has been left too far from the Metro station. Systematic but partially monotonous office facilities are created on the second floor. The solution significantly exceeds the scope specified in the competition programme, is functionally challenging, and is simply too costly.

#### Student flats

Student flats have been placed in a high-rise block, ensuring that all students live close to the Students’ Community Centre. The 3D illustrative outdoor view confirms the validity of the competition programme’s recommendation regarding the maintenance of low building heights at the northeastern part of the competition site. Even though the tall building is set back from the street and square lines, its form is too dominant for its surroundings. The plan configurations of the student flats are fundamentally impractical, seemingly based on the assumption that no time would be spent in the dwellings except for sleeping. During Finland’s long dark winters, however, a considerable amount of time is spent indoors.

An elegant roof garden with distant views has been created on the roof of the Students’ Community Centre.

#### Housing

The orientation of the apartment buildings also aims at the strengthening of the block’s transverse pedestrian and bicycle routes. In terms of residential ambience, three main categories of housing milieus and building types have been formulated: living in the forest, living around rooftop gardens, and “living in the sky”.

The apartment buildings are single-storey podiums, upon which are placed buildings ascending stepwise to form a hybrid of lamellas and “dice”. The width of the buildings’ structural frames is slightly less than 14 metres; at their highest efficiencies, stairwells provide access to 7-9 dwellings.

The study of lighting conditions has led to higher building frames at the northern end. In certain locations, the space between buildings is less than 8 metres. Flat-related auxiliary spaces, storages, and offices are placed on lower floors. Retail premises have also been located along Vuorimiehentie. Roof gardens, children’s play



areas, and skateboard parks adorn the podiums' roofs. Ground level flats are also located in certain buildings. Defined by the lower sections, intimate spaces that become attractive outdoor sitting areas during the summer months have been created in courtyard areas. The podium concept suggests a clear-cut hierarchy: public at the courtyard level, semi-public at the podium's roof, and private at the upper floors. Occasionally there are exceptions, for example when flats open directly to courtyards.

In certain locations, the complex massing generates excellent plan configurations when a flat is at an exterior corner, but also poor solutions at flats receiving insufficient light at interior corners. Living rooms are too narrow in flats where there is a large square-shaped balcony. Bedrooms are also too narrow in certain flats. Certain ground floor flats are entered directly to a sofa group; in Nordic countries a vestibule and entrance foyer is always necessary. Flats whose longest wall is an exterior wall achieve the best plan configurations.

The auxiliary living amenities presented in the design, such as swimming pools and outdoor sports fields are, in Finland's harsh reality, luxuries whose construction would rarely attract funding.

Despite the attractiveness of the design, the excessively large quantity of different buildings and roof gardens make the construction of these apartment buildings too expensive for an investor in this area.

### Traffic

Pedestrian and bicycle traffic

- The entry presents connections from Lehmuskuja to Vuorimiehentie and Tekniikantie. The route leading from the residential sites through Lehmuskuja to the Metro station is fluent.
- Although the path leading from the Metro station through the student courtyard to Kivimiehentie is functionally relevant, it contains stair connections and is thus not completely handicapped-accessible.

Public transport

- Drop-off traffic for the Metro station and Väre building has been placed near the entrances to the main square. The Raide-Jokeri light rail stop and bus stops have been positioned according to the competition programme.

Parking

- Parking has been located on two levels in the western section of Bionova's podium with a vehicular connection to Vuorimiehentie.
- The parking facility is excessively centralised from the cityscape point of view.

Service traffic

- Drivable connections to all buildings' entrances have not been arranged.

Emergency access routes

- Suitable emergency access routes have not been shown for all buildings.

### Cost-effectiveness

The project cannot be implemented at the target price without substantially altering the design solution.

### Summary, "Otaniemi Innovation HUB"

An idea-rich and innovative entry, enlivened by a new kind of garden-like relationship with nature, in which a substantial number of different dwelling types have been studied. "Otaniemi Innovation HUB" commendably advocates the kind of timber construction that is particularly welcome at the innovation site. The modular system based on wood construction guarantees wide-ranging adaptability. Unfortunately, however, the competition's unconditional cost-effectiveness requirements, as well as the proposed implementation method, have eliminated this possibility. The wooden canopies, presented at what would otherwise be a vacant area near the Metro station, are unjustified.

## 5.3 Entry-Specific Assessments

### “Nexus”

#### General

The entry is the only one of the four competition entries presenting a solution that can be easily developed as a town planning concept for the Kemisti block – a varying combination of lower structures and building volumes gradually ascending in certain directions. The advantage of the proposal’s dice-like configuration is that excessively massive buildings are not created in the area. The dice-like structures can be enlarged without compromising the overall entity.

#### Bionova

Transverse sections of varying lengths are attached to a long backbone, enabling premises leased to outside tenants to easily form their own entities.

Ground floors open outwards on the street and courtyard side; the degree of privacy increases on upper floors. To minimise the adverse effects of sunlight while optimising indoor lighting conditions, panel-like white concrete columns have been presented for the streetside façades. This may, however, create a feeling of introversion at ground level, inconsistent with the competition’s objective.





Laboratories have been dispersed to place them near offices. The user requires, however, a unified laboratory facility.

### **Residential buildings**

For its part, the portion of the site reserved for residential construction follows the overall concept for the site; point blocks rise from curved lower sections. The disposition of the building also forms shielded courtyard areas. The flats' configurations are effective; for example small rental units with windows facing in two directions are possible. At the apartment buildings' ground floors, the VTT Technical Research Centre of Finland's cave-like working areas are accessed by a lift with a separate outside entrance.

The façades' fenestration pattern is, in terms of its variability, harmonious and balanced owing to the entire mass's consistent horizontality.

Certain student flats have been presented as being nestled between the wings of the existing

School of Chemical Engineering. Because this solution would fundamentally darken the existing building's working areas, it cannot be approved.

The continuous ground floor hinders the possible phase-wise implementation of the apartment buildings. The costs of building the flats with podiums are too expensive for an investor in this area.

### **Students' Community Centre**

The stylistically elegant entry realises the basic idea of a Students' Community Centre. The concept of the building matches the entire block's town plan thinking: rectangular dice-like building volumes have been superimposed on a low, curved, and deep framed building volume. The ground floor opens well at street level and outdoor areas have been successfully designed to support the Students' Community Centre's activities. The transparency of the lower level blurs the distinction between indoor and outdoor space, one of the

## 5.3 Entry-Specific Assessments

### “Nexus”

competition’s objectives. Owing to its low-profile ground floor, the building could be repositioned even closer to the Learning Centre.

The selected column-slab structural scheme provides the building with excellent long-term adaptability.

Rectangular rooms separated by open meeting places have been placed within the freeform frame. On the third and fourth floors, facilities for student organisations have been dispersed in different building volumes. The building’s separated “dice” are not functionally practical, nor does the spatial solution promote the student organisations’ joint activities.

Although certain student flats connected with the club building at its curved section are commendably close to the Students’ Community Centre, only a thin slice of an important wooded hillock’s highest point remains.

The implementability of the building’s numerous masses of varying heights and large quantity of roof gardens is challenging. The many elevation differences in the housing sites’ terrain have led to a proliferation of ramp and staircase solutions in courtyards.

Because the curved glass walls have led to substantial cost overruns, they are unimplementable as such.

#### Traffic

Pedestrian and bicycle traffic

- The pedestrian and bicycle traffic paths located within the block are workable.

Public transport

- The narrow space serving as the Metro station’s drop-off point, as well as the Raide-Jokeri light rail stop and bus stop, have been presented according to the competition programme.

Parking

- A centrally located and compact three-level parking facility has been placed at the edge of the housing site next to the School of Chemical Engineering.

Service traffic

- Bionova’s servicing has been located in an adjoining area near the existing Department of Chemistry and Material Science that is not a primary light traffic route, but service traffic to the Students’ Community Centre uses the block’s interior paths for pedestrian and bicycle traffic.





#### Emergency access routes

- Emergency access routes at apartment buildings are partially lacking.

#### Cost-effectiveness

Implementing the project at the target price without substantially altering the design solution is particularly challenging.

#### Summary, “Nexus”

Besides exuding an innovative and organic interpretation of a mixed-use site, the proposal has also carefully studied its outdoor spaces; the overall impression is commendable. Subtle and efficient, the entry conveys the spirit of Otaniemi even in a Modernist sense. In terms of construction technology “Nexus” represents, except for its curved walls, basic modular construction.



## 5.4 Entry-Specific Assessments “EDGE”

### General

The proposal is based on three separately perceived block sections: the Students' Community Centre, Bionova laboratories, and housing construction. The Students' Community Centre and Bionova have been linked with a low greenery-roofed building featuring streetside commercial facilities.

According to the written summary and diagrams, the block consists of “typologically different buildings” that have been developed from the same basic shape – a cube. The functional purpose has determined the development of the shape into four types: The Students' Community Centre is linked to Otaniemi's existing core area and the new Väre building that will be used by the Aalto University School of Arts and Design. Near the water tower, flats will join the existing building stock, Bionova to the building stock on its south side, the School of Chemical Engineering, and its buildings on the northern side. In actuality, the School of Chemical Engineering, Department

of Chemistry and Material Science, and the new Bionova represent the same type.

The 3D illustrative outdoor view also indicates that the block's internal sections are public squares. Within the block, the spaces between the buildings are paved throughout, relieved only by small planted patches. The paving unifies the separated buildings at their ground floors, but raises the question of Otaniemi's square hierarchy. When striving to impart a more urban-flavoured ambience to Otaniemi, increased density at streets and their related squares is more important than in the sites' interior sections.

### Bionova

Long and narrow parallel office buildings have been located alongside the preserved Department of Chemistry and Material Science. The grouping of the more centrally located “sticks” has been rotated; a lower section runs along Vuorimiehentie. The high and elongated foyer is spatially handsome, and a 3D illustration indicates that there would be a view to Otaniemi's





Undergraduate Center, which in reality would be concealed behind the Students' Community Centre and the façade of the Learning Centre would remain almost hidden from the selected viewing point.

The parking area at the southwestern end of the site leaves space for future construction, but in the entry it appears to be an incomplete location.

Laboratories have been placed on ground floors with office facilities in a completely separate

building. The floors of the dice-like laboratory ascend step-wise. The selected solution emphasises the building's importance in its surroundings but is too monumental considering its proximity to the housing site.

For functional reasons, however, the laboratories and offices should be located in the same building.

"Small-scale Start-up hubs" near the School of Chemical Engineering's interior courtyards is a

## 5.4 Entry-Specific Assessments “EDGE”

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good idea, but start-up facilities in Otaniemi will be concentrated in certain buildings.

### **Students' Community Centre**

The orientation of the building opposite the Learning Centre has succeeded by opening the space towards the Väre building and Metro station. Indoor spaces are generally workable, but the entry has paid insufficient attention to outdoor sitting areas in the interior portion of the block.

The proposal is functionally practical for use as a students' community centre and is cost-effective.

Student flats situated above the Students' Community Centre implement the competition's objectives regarding the mixing of functions by building, as well as the student organisations' preference for a fluent connection between student flats and the Students' Community Centre. Like a lantern, the glazed façade reveals the interiors during dark seasons, enhancing the sense of vitality also sought in the programme, at one of Otaniemi's most important locations. The façades' brick poles combined with glazed surfaces is a safe solution when relating to Otaniemi's existing materials.

### **Housing**

The housing site exudes a stylishly controlled ambience and most flats face green areas. Residential buildings have been disguised to resemble office buildings by extending the balcony glazing on long façades from end to end. This feature was considered particularly admirable for the apartment buildings constructed in connection with the Students' Community Centre because of the proximity to Otaniemi's most culturally and historically important area. Owing to the glazed balconies, operable windows do not open directly outwards. The façades are attractively proportioned. Stairs and lifts are unnecessarily duplicated in multi-storey buildings. The implementability of the building's varying heights and roof terraces is challenging.

The quantity of joint facilities on ground floors can be reduced and combined; for example, laundry rooms are not necessary in every building.

### **Traffic**

Pedestrian and bicycle traffic

- Pedestrian traffic has been concentrated along Vuorimiehentie and the centre of the block.

Public transport

- Workable solutions have also been presented for the Metro station's and Väre area's drop-off traffic.
- The locations of the Raide-Jokeri light rail stop and bus stops conform to the competition programme.

Parking

- The parking facility solution is effective because internal ramps are not necessary. Vehicular access to the different levels has been integrated with the terrain, but the siting of the facility is too centralised from the cityscape point of view.

Service traffic

- A service area accessed from Tekniikantie has been situated between Bionova and the Department of Chemistry and Material Science, but no service connection has been shown to the School of Chemical Engineering or the student flats facing its inner courtyards.

Emergency access routes

- Arrangements for emergency access routes are clearly lacking.

### **Cost-effectiveness**

Implementing the project at the target price without significantly altering the design solution is challenging. Of the four alternatives, however, this proposal is the most economical.

### Summary, “EDGE”

The design realizes the competition’s objectives in terms of constructing an urban environment, but it lacks uniqueness. The entry’s photorealistic 3D illustrative outdoor views provide the impression of a more refined design than is actually the case.



## 6. Continuation Phase, Decision

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Because all competition entries substantially exceeded the assigned budget targets, the Competition Jury decided to verify the development potential of what it considered to be the two best entries: “Nexus” and “EDGE”. Deviating from the originally intended single-phase competition format, a streamlined continuation phase was arranged for these two entries whose authors then met with cost experts to discuss the ways in which the competition’s cost targets could be attained.

Guidelines were provided to competitors at a meeting held on 26 January 2017.

### **Continuation phase, general guidelines:**

**Total costs in all entries have exceeded the programmatic targets.**

**More spaciousness should be created at the competition site’s ground level and between buildings.** There should be no construction in the courtyards of the buildings facing Kemistintie. Attention should be paid to shadowing.

**Learning Centre’s square:** From the cityscape point of view, the most important location at the terminus of Otaniementie and its related crossing with Vuorimiehentie can be emphasised with building massing, the appearance of ground level floors, and streetside accessibility. Conversely, cityscape-related requirements at the middle and western end of Vuorimiehentie are less demanding. Construction at the western end of Vuorimiehentie can thus be simplified, but must remain adaptable. The crossing of Vuorimiehentie and Tekniikantie also forms an important entrance route.

### **Design of Bionova**

Net floor area 30,000 m<sup>2</sup>

1. For Bionova’s future users, the most important factors will be functionality, cost-effectiveness, spatial efficiency, and in particular adaptability.
  - Attractive entrance and façade on the street side, cost-effective façade solutions, particularly in laboratory sections and the Department of Chemistry and Material Science side.
2. The building massing should be compact, and cannot be too long or featureless along Vuorimiehentie.
3. Further planning of laboratory building:
  - The laboratory’s service yard (gas centre, goods deliveries, waste management, and other similar functions) should be indicated.
  - Laboratory facilities should be linked to Bionova’s office section for functional reasons.
  - The design of technical solutions should make the building as adaptable as possible. It is recommended that offices be situated at the Otaniementie end, and laboratories closer to the Tekniikantie end of the building.

### **VTT Technical Research Centre of Finland, ground-level offices**

1,500 m<sup>2</sup> gross floor area (open offices) shown in connection with lift. Contrary to the specifications in the competition programme, offices will not be placed in apartment buildings. The office section’s floor areas will be re-evaluated during the town planning phase.

### **Students’ Community Centre**

To be designed cost-effectively according to the room programme. It is also hoped that student flats will be as close as possible to the Community Centre.

## Flats

The total gross floor area is 30,000 m<sup>2</sup>, including student flats that should also be situated at the corner of Vuorimiehentie and Tekniikantie. For cost reasons buildings cannot be too small; the quantity of flats per floor should be increased. Auxiliary facilities such as clubrooms and laundry rooms are not necessary in every building.

### Cost ceilings:

- Offices: EUR 2,500 / gross m<sup>2</sup>.
- Basic laboratories: EUR 2,500 / gross m<sup>2</sup> (additional price later depending on laboratory solutions).
- Flats: EUR 2,500–3,000 / rentable m<sup>2</sup> (incl. VAT) depending if flat is student/rented/owner-occupied.

The entry shall comply with the competition programme's gross floor area quantities and cost targets. Competitors shall confer with Arto Palo/ Tapio Holopainen and provide an explanation of the measures taken to attain the targets.

### General cost reduction measures:

- Less glazed façades, particularly curved sections.
- Less curved façade sections.
- Smaller exterior terraces.
- Reduction of atriums' scope.
- Less fine-grained façade elements (corners).
- Reduction or removal of possible water themes, roof gardens, or extensive planted roofs.

### Required documentation:

1. Site plan A3 showing gross m<sup>2</sup> floor areas by building type: Students' Community Centre, Bionova, flats.
2. Panorama view A3 from corner of Otaniementie and Vuorimiehentie (attachment) with former library building (nowadays the Learning Centre) visible in the picture.

3. Optional 3D illustrative outdoor view, A3.
4. Written summary with itemised cost considerations.
5. If necessary new name envelope identifying entries' authors (possible additions and changes).

## Entry-specific guidelines, EDGE:

### 1. Costs

- The proposal is partially cost-effective, but all cost targets must be reached; actions taken are to be explained in the written summary.

### 2. Cityscape

- The concept is ordinary, lacking the uniqueness, attractiveness and cityscape boldness of the Otaniemi landscape.
- The hybrid concept remains unclear.
- Besides the Väre square and the square between the Learning Centre and the Students' Community Centre, a "third square" has been presented at the crossing of Otaniementie and Vuorimiehentie. The justifications for a square at this location should be reconsidered.
- The entry's squares display too many paved surfaces, particularly at the interior sections of the site.
- The practicality of the pedestrian and bicycle routes through the block should be developed.
- Open ground-level parking at the corner of Vuorimiehentie and Tekniikantie is unacceptable.

# 6. Continuation Phase, Decision

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## 3. Functions

### Commercial spaces

- The centralised placement of commercial functions is good.

### Bionova

- The laboratory should be linked directly to Bionova; the cityscape-related appearance of the resulting long façade should be solved.
- The questionable implementability of a wide central lobby running along the entire length of the building was considered a weakness. A central lobby only at the side facing Otaniementie would be sufficient.

### Flats

- The housing site is partially inefficient; the building sections' varied heights, as well as their duplicated lifts and stairwells, are economically challenging.
- The design of the flats' floor plans is workable.
- Emergency access routes should be organised around buildings.

### Other

- Clear and attractive pedestrian traffic connections from the housing site to locations such as the Metro station and parking facilities should be arranged.

## Entry-specific guidelines, Nexus:

### 1. Costs

- The questionable implementability of the Bionova façades' curved glass walls and the fine-grained complexity of the upper floors' façades were considered weaknesses.
- Bionova's curved façades were considered unnecessary at the laboratory section as well as on the side of the preserved Department of Chemistry and Material Science.
- Replacing Bionova's white concrete podium solution with a less expensive material should be studied.
- Cost targets must be reached; the actions taken are to be explained in the written summary.

### 2. Cityscape

- The overall concept governing the entire block was commendable, but expensive.
- The treatment of the terrain near the Students' Community Centre and at outdoor sitting areas is praiseworthy, but public outdoor spaces and the street milieu should be developed in a more urban-flavoured direction; additional greenery at the block's interior sections has been sought.
- Open innovation facilities at ground level should be closer to the street; the podium section does not have to continue along the entire length of Vuorimiehenkatu.
- The flexible placement of ground-level commercial premises and transfer of the centre of gravity to the corner of Otaniementie and Vuorimiehentie should be considered; possible facilities for shops should be sited visibly and attractively, not "hidden" behind buildings.
- The appearance of Bionova's upper section could be more inviting.



### 3. Functions

#### Students' Community Centre

- The Students' Community Centre's higher dice-like volumes separating the organisations fail to foster the sense of community desired by the student organisations. An alternative spatial structure should be studied, for example the addition of another floor to the podium.

#### Bionova

- Constructing business premises as a part of Bionova requires the shifting of the building towards Otaniementie closer to customer flows.

#### Flats

- Cost-effectively, the housing site's dice-like volumes are too small.
- The apartment building cannot be placed over a parking facility.
- Emergency access routes should be arranged around the buildings.

This phase concluded 13 March 2017.

## 7. Continuation Phase, Progress

Both entries selected for the continuation phase arrived on time and contained the required documentation.

The Competition Jury convened twice for the final assessments.

# 8. Continuation Phase, Assessment

## 8.1 General assessment

The continuation phase proved to be worthwhile. “EDGE” and “Nexus”, the entries selected for further refinement, evolved in the desired direction based on the first phase’s feedback.

The guidelines provided also brought the entries closer together; “EDGE” substantially reduced the quantity of paved ground surface areas as well as the excessive straightforwardness of the construction on the Vuorimiehentie side. “Nexus” for its part evolved from a soft-lined construction meandering with the terrain to a more urban-flavoured entity.

A considerable quantity of red brick façades – specifically the use of reclaimed demolition bricks – had originally been proposed in both entries. Reclaimed demolition bricks impart a significantly livelier surface texture to new brick masonry. Massive walls laid up with solid bricks have also proven to be an extremely durable and healthy construction method when combined with indoor air-permeable surfacing materials, another justification for their use. In practice, cleaning the bricks is extremely labour-intensive, a problem that must be addressed if this material is selected during the implementation phase.

Construction costs were dramatically reduced. Both entries continued to exceed the original cost estimates, but significant differences in each proposal’s cost levels were not detected, and the consulting experts agreed that both entries could meet their cost targets.

Both entries still require refinements at the town planning phase that would reduce the flats’ building costs by approximately 20%; this is necessary to ascertain the buildings’ feasibility for investors. The possibility of implementing the housing block in phases should thus be more carefully studied in the area’s further planning.

## 8.2 Entry-specific assessments

### “EDGE2”

The proposal has improved substantially in the continuation phase and the construction cost estimate has been lowered without compromising the entry’s level of quality.

### Cityscape

The Students’ Community Centre has been shifted slightly northwards, and façades on the square side have been stepped to locate the entrance at the point of inflection. A 3D illustrative outdoor view shows this to be a successful solution.

The previously criticised completely paved ground surface at the crossing of Otaniementie and



Vuorimiehentie has been replaced by planted patches split by narrow pedestrian paths. The connection to the Learning Centre from the adjoining extensive lawn area opening to the north has thus been softened as was suggested.

Bionova's long section along Vuorimiehentie has been broken into multidirectional segments whose joining to the greenery-roofed low section at the building's northeastern end has become significantly more fluent than in the original design; trees have also been left along Vuorimiehentie.

Parking has been switched to the central part of the block. Apartment buildings presented at the crossing of Vuorimiehentie and Tekniikantie successfully terminate the visual axis as one approaches the site from Tekniikantie.

### Functions

Laboratory facilities have been combined as a workable part of Bionova. Extremely deep-framed and thus efficient space has been created at the building's southwestern section. Although the size of the high central atrium has been substantially reduced, a feeling of spaciousness has been retained at the building's northeastern end where the space opens towards the Students' Community Centre. The laboratory and office facilities have developed functionally and construction costs have been reduced, but the excessively long distances between Bionova's extremities are still problematic.

Unnecessary stairs and lifts have been removed from the apartment buildings.



## 8. Continuation Phase, Assessment

### “Nexus2”

The first phase’s criticism focused primarily on the substantially excessive cost level, and less on cityscape-related or architectonic deficiencies. In the continuation phase, the authors have demonstrated that construction costs can be significantly reduced without compromising the overall concept of the entry. The further development of Bionova has been advantageous; greater clarity has resulted from the simplification of the podium’s corrugated façade alignment.

### Cityscape

To give streetside business premises more desirable locations, the guidelines provided for the continuation phase suggested the repositioning of Bionova closer to Otaniementie. As a result of the shift, all traces of the most important wooded hillock in the landscape have vanished. The quantity of paving at the crossing of Otaniementie and Vuorimiehentie, as well as along Vuorimiehentie, has increased, but the site plan and 3D illustrative outdoor view indicate that more trees and their undergrowth can remain.

At the crossing of Vuorimiehentie and Tekniikantie, housing construction has been added as an extension to the more compactly designed Bionova.



## Functions

Compared to the first phase version, Bionova has been developed as a shorter and more compact building mass whose podium has been simplified by straightening wall segments. The upper floors' undulating elements have been combined. The entire narrow space between the existing Department of Chemistry and Material Science and the new Bionova facility has remained as a ground level service yard accessed from the block's longitudinal route passing between the School of Chemical Engineering and Department of Chemistry and Material Science buildings. The laboratories have been concentrated according to the user's preferences.

In the first phase, the concealment of Bionova's northeastern end behind a tree stand failed to

implement the competition objective related to the visual accessibility of streetside business premises at ground level. The situation has now been rectified with a new and more inviting entrance at the end of the building.

As was instructed, the apartment buildings between the wings of the School of Chemical Engineering have been removed.

The Students' Community Centre has been concentrated, and the quantity of curved glass walls and trafficked roofs has been reduced. The higher "dice" have been combined to enhance interactivity in the student organisations' office facilities, a clear improvement compared to the first phase's entry.



# 9. Competition Results

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## 9.1 Decision of the Competition Jury

The Competition Jury unanimously decided to select “Nexus” as the winning entry. The proposal is subtle, effective, and even with its high site efficiencies, conveys the spirit of Otaniemi. It is a distinctive entity that imparts variety to its surroundings and supports the university’s diversification objectives.

The requested 3D illustrative outdoor view demonstrates that the Students’ Community Centre’s low podium section presented in this entry provides an attractive response to the Learning Centre’s proportions.

No significant differences on cost levels were discerned in the entries selected to continue.

## 9.2 Jury’s recommendation for further development

The area’s further design and town planning, as well as the quantity of construction, shall take into account the features and special characteristics of this nationally significant cultural environment. Designs always evolve in further architectural and urban planning to a certain extent, but in this case they should preserve the qualities of the winning proposal specified in the Competition Jury’s decision: subtlety, the spirit of Otaniemi, the importation of variation into the surroundings, and the beauty of proportions.

An extremely sensitive planning grasp will be required, particularly at the block’s northeastern section, close to Otaniemi’s oldest core area whose construction until now has been extremely dispersed. The Students’ Community Centre being designed opposite the Learning Centre will become part of Otaniemi’s historic core, the site’s most culturally valuable environment where the spirit of Otaniemi cherished in the competition is at its strongest. It should be emphasised that all participants bear heavy responsibilities as they determine the kind of local milieu that will be formed at Otaniemi’s most prominent location and the Learning Centre (Alvar Aalto 1970).

Competition Jury members Tommi Lindh and Sari Nieminen expressed the opinion that the competition demonstrates that the assigned floor area target has led to excessively dense construction on the Kemisti block, and that a reduced floor area target should be studied in connection with further planning.

### 9.3 Signatures



Antti Ahlava  
Chairman of the Jury



Antti Tuomela  
Member of the Jury



Olavi Hiekka  
Member of the Jury



Taru Haimala  
Member of the Jury



Ossi Keränen  
Member of the Jury



Tommi Lindh  
Member of the Jury



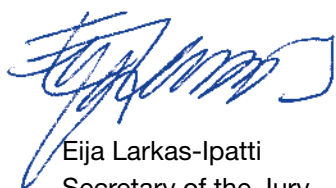
Pyy Haahtela  
Member of the Jury



Sari Nieminen  
Member of the Jury



Teemu Kurkela  
Member of the Jury



Eija Larkas-Ipatti  
Secretary of the Jury

# 10. Authors of Entries

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## 10.1 Coded pseudonym: “STRAY DOG”

Copyright: MORPHOSIS ARCHITECTS, USA

Sustainability

consultant: BURO HAPPOLD ENGINEERING, USA





## 10.2 Coded pseudonym: “OTANIEMI INNOVATION HUB”

Copyright: estudioHerreros, SLP  
Designers: estudioHerreros / Juan Herreros & Jens Richter  
Collaborators: Transsolar / Klima Engineering  
DIFK  
TOPOTEK 1

# 10. Authors of Entries



## 10.3 Coded pseudonym: “NEXUS”

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Copyright /

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Landscape architect MARK MDL

Sune Oslev,

Landscape architect MSc

Assistants:

Inka Norros,

Landscape architect MARK

Franka Oroza, Architect MSc



#### 10.4 Coded pseudonym: “EDGE”

Copyright: Architects Lahdelma & Mahlamäki Ltd

Authors: Rainer Mahlamäki, Professor, Architect, M.Sc.  
Ilmari Lahdelma, Professor, Architect, M.Sc

Collaborators: Taavi Henttonen, Student of Architecture  
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Heidi Siitonen, Architect, M.Sc.  
Cristian Stoian, Student of Architecture  
Julius Seniunas, Student of Architecture  
Jan Krupa, Student of Architecture  
Petri Saarelainen, Architect, M.Sc.

Visualisations: Brick Visual

Landscape Design: LOCI maisema-arkkitehdit Oy

#### Coded pseudonym: “EDGE2” / Continuation Phase

Copyright: Architects Lahdelma & Mahlamäki Ltd

Authors: Rainer Mahlamäki, Professor, Architect, M.Sc.  
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Tarmo Juhola, Architect, M.Sc.  
Jan Krupa, Student of Architecture

Scale Model: Protolabs (3D printing)



EDGE2



NEXUS2