



Annual Review 2017

Heureka
Joy of Discovery!





Annual Review

Heureka 2017

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Mission:

Joy of Discovery!

- Heureka inspires discovery and participation.
- We encourage learning.
- Science and research are at the core of our operations.
- Our content and themes are known for their impact.

Vision:

The most entertaining way to get excited about science, to learn and to spend time together.



The renewed Heureka is well received

The year 2017 will remain a memorable one for Heureka's history. The extensively planned and implemented expansion project was successfully completed and the renewed Heureka opened to the public at the end of January. The opening event signified an important milestone, not only in terms of the renewed and expanded building, but also as it signalled a step towards innovative ways of thinking and operational methods. The motivations behind the renewal were to enable Heureka's visitors to take a more hands-on approach in addition to experiencing things as well as to encourage co-operative partners to view Heureka as a platform for collaboration. Throughout the year, Heureka was able to observe how well our visitors and partners internalised these ideas, and how the newly branded image, created to support the renewal, has worked in practice. The number of visitors clearly increased from 2016, when the renewal had just got underway. The jump from 220,000 visitors to more than 275,000 was a considerable improvement, even though we had set the bar even higher. The fact that the visitors fell slightly below the budgeted number together with the significant investments required for the renewal weighed heavily on Heureka's finances.

In connection with the expansion, we opened the Idea Workshop, where visitors can participate and test their creativity in new ways in the face of different challenges. Along with the expansion, Heureka gained new laboratory facilities and the Aha! Workshop, which enables children to participate in projects and hands-on experimentation. Throughout the year, school groups had the opportunity to experience different types of workshops thanks to the Science Sponsor programmes and the chance to test out new learning applications. During the summer, we joined forces with our public to test, quite successfully, the practical application of citizen science through an Åbo Akademi University study concerning witness statements. During the year, we also worked with the Finnish Innovation Fund SITRA to realise a tour with the robot, Pepper, as part of the Seven Siblings from the Future exhibition. The feedback we received from these projects has been excellent and encourages us to continue on this path.

Heureka's position as a platform for collaboration is particularly visible in its broad range of events offered throughout the year. During 2017, Heureka continued arranging evening events specifically intended for adults, offering co-operative partners possibilities to organise their own events and, through co-operation, arranging different events related to current topics in the field of science.

Heureka's key science communication tools are exhibitions and their utilisation for learning purposes, a variety of events and work with co-operative partners. At the end of January, Heureka opened the Body Worlds -

ANIMAL INSIDE OUT exhibition and the visibility in the media was extensive. Thanks to this exhibition, the number of visitors to Heureka saw a notable boost in early spring. During the spring, Heureka also opened the Electric City exhibition, which was produced through co-operation with the Finnish Association of Electrical Safety (STEK). During the autumn, the exit of the Body Worlds exhibition made way for the Viral! exhibition and the Seven Siblings from the Future exhibition, the opening of which served as the jubilee celebration of the supporting sponsor SITRA's 50th anniversary and part of the Finland 100 programme to celebrate the centenary of Finland's independence.

The expansion of Heureka Shop by opening shops in shopping centres in the metropolitan area continued with the preparation of a shop in the REDI shopping centre being built in the Kalasatama area in Helsinki and with an agreement for collaboration with a significant actor within the museum branch. The result of Heureka Shop for 2017 was positive for the second year in a row. In terms of the development of Heureka Overseas Productions Ltd, initiatives abroad, particularly within markets outside of the science centres, proved to be arduous, and with the ageing of the existing travelling exhibitions, the time required to develop new concepts presented a clear challenge. The export activities did not reach the financial targets for 2017.

The year clearly showed signs that changes are occurring in terms of the expectations and habits of Heureka's visitors. Even though we received better feedback in 2017 than we have in earlier years, the increase in the number of visitors did not entirely meet our expectations. The significance of science, the importance of facts and critical thinking remain visible in headlines, and interest in science does not appear to be diminishing in Finland. On the other hand, the competition for people's leisure-time gets tougher and the variety of activities is constantly growing. Heureka will continue, however, to shed its skin time and again and to invest in the development of its visitor experience and the provision of ever more interesting content - together with our co-operative partners.

Tapio Koivu
CEO

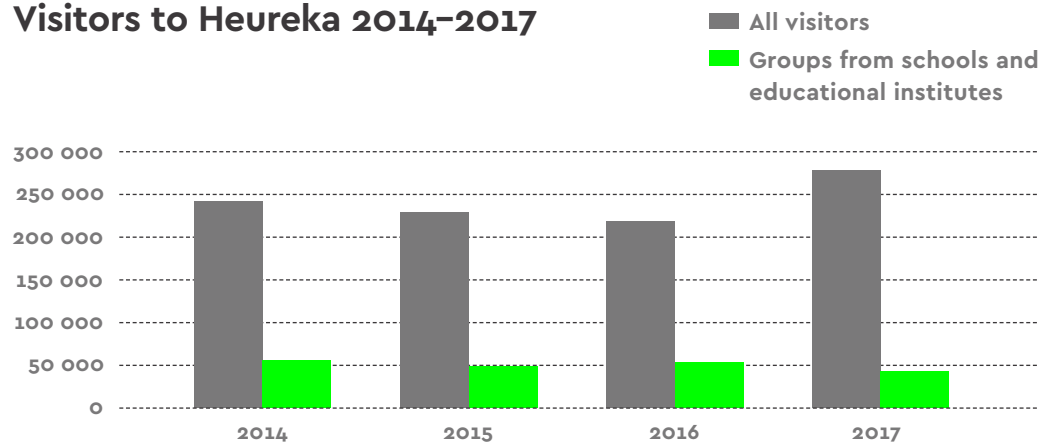
Heureka's visitors

In 2017, the Finnish Science Centre Heureka had a total of 275,695 visitors. The figure grew dramatically from the previous year (219,494 in 2016). The opening of the renewed and expanded Heureka, at the end of January 2017, attracted clearly more visitors in comparison with the previous years.

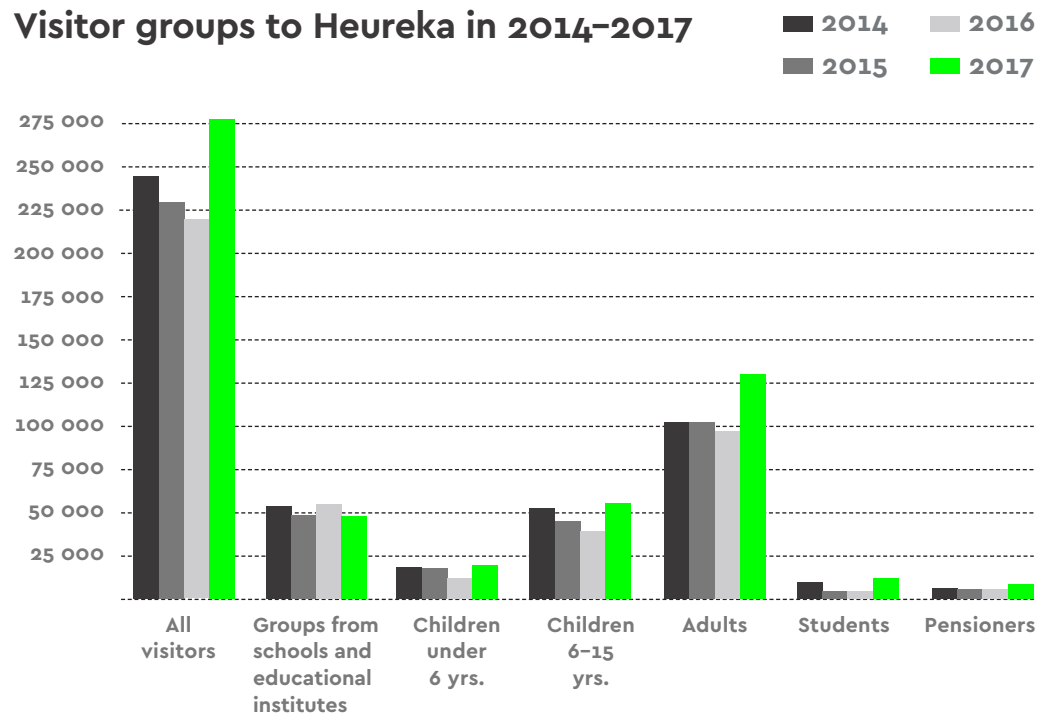
The majority of Heureka's visitors were families and groups, who visited the science centre during their free

time, primarily on the weekends and during school holidays. Nearly 20% of the visitors were groups from comprehensive schools and other educational institutes, who generally visited on weekdays during the school year. These groups accounted for 48,721 visitors, which was less than during the previous year (55,355 in 2016). The other visitor groups saw a marked increase from the previous year

Visitors to Heureka 2014-2017

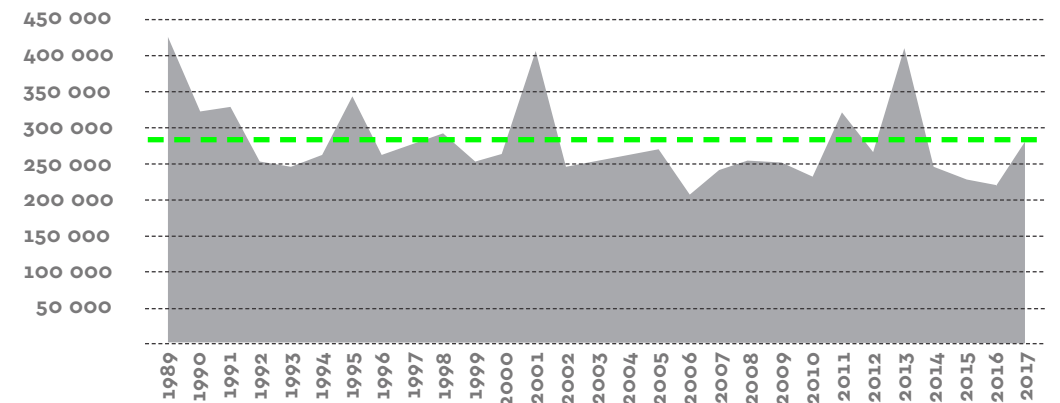


Visitor groups to Heureka in 2014-2017



Number of visitors in 1989-2017

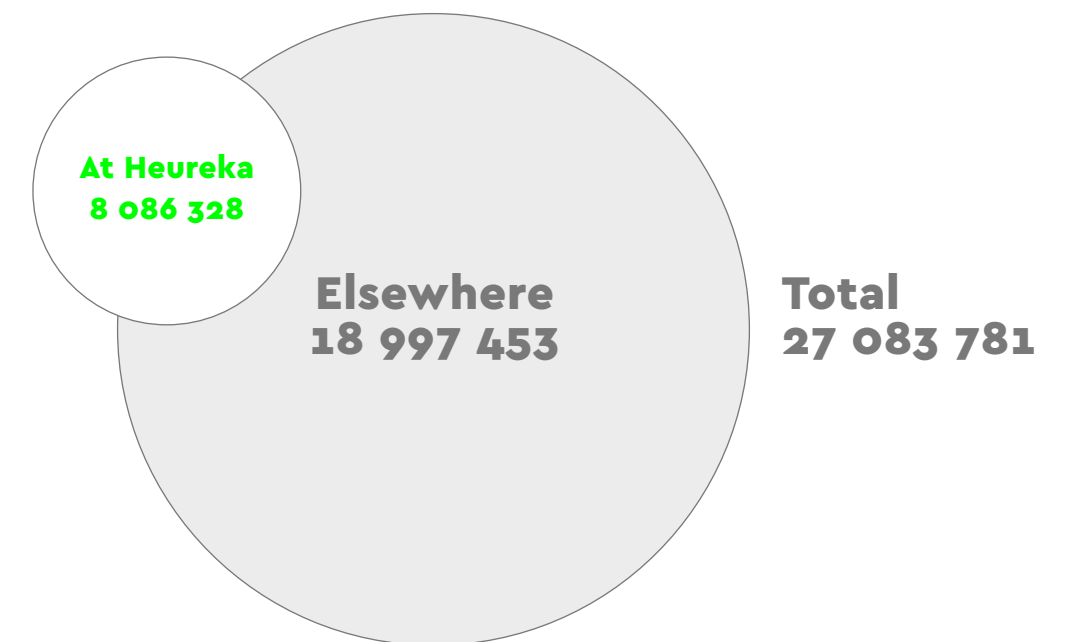
In terms of its number of visitors, Heureka is among Finland's most popular recreational destinations. When the science centre was in the planning phase in the 1980s, the number of visitors per year was estimated to be 250,000. The long-term average has risen slightly higher than predicted, to a total of over 280,000 visitors per year. The annual number of visitors varies from year to year quite significantly depending on, for example, the range of exhibitions offered by Heureka and its competitors and the economic situation, which has an impact on the demand and consumer decisions of different visitor groups.



Number of visitors to Heureka in 1989-2017. The average of 279,000 visitors/year is marked with the dotted green line. The Family Life of the Dinosaurs (2001) and Body Worlds (2013) exhibitions were exceptionally successful and increased the number of visitors to more than 400,000.

Visitors to Heureka's exhibitions at Heureka and elsewhere in 1989-2017

Heureka opened its doors to the public in April 1989. Since then, Heureka's exhibitions have been seen at Heureka by more than 8 million visitors. When expanded to include those who have seen Heureka's exhibitions on display elsewhere in the world, the figure rises to over 27 million.



Exhibitions and exhibition projects

During 2017, Heureka was host to three different temporary exhibitions: Body Worlds – ANIMAL INSIDE OUT, Seven Siblings from the Future and Viral! In April, the new Electri City exhibition was opened in the main exhibition area. Additionally, Heureka's Event Square was chosen to display the Sensual Mathematics exhibition from May until October.

Body Worlds – Animal Inside Out

28 January – 29 October 2017

The Body Worlds – ANIMAL INSIDE OUT exhibition had the honour of being the first temporary exhibition to open in the expanded Heureka building. The exhibition was an extension of the Body Worlds exhibition, which had been on display at Heureka in 2013, and showcased human anatomy with the help of actual human plastinates. The animal plastinates and smaller anatomical displays of the ANIMAL INSIDE OUT exhibition filled both the Vaulted Hall and the Cube Hall. The largest and most impressive animals in the exhibition were the giraffe and Asian elephant. The great white shark with a sea lion in its mouth was premiered at Heureka. The exhibition was rented from the German company Arts&Sciences Berlin GmbH.

217 710
visitors
while on display

795 visitors
/day

Seven Siblings from the Future

16 November 2017 – 13 January 2019

The exhibition **Seven Siblings from the Future** was realised through co-operation between the Finnish Science Centre Heureka and the future-focused Finnish Innovation Fund Sitra. The exhibition was produced to coincide with Sitra's jubilee year and the Finland 100 programme, and it opened at Heureka on 16 November 2017 in connection with Sitra's 50th anniversary celebrations.

Part of the exhibition planning was implemented in 2017 during a tour of seven municipalities in Finland. Throughout the tour, young people, in particular, took part in developing the content of the exhibition. The aim was also to increase young people's awareness of the future and to spark discussion about the choices facing us in the future.

The exhibition provides an opportunity to consider the possibilities that the future will offer to Finland and people in Finland, and how these possibilities might be realised or affected. The exhibition particularly emphasises our active

relationship with the future: the future is not pre-ordained, rather it is created through our choices.

Visitors are introduced to these future choices through seven siblings from the future who are each guided by their own set of values. These value profiles are based on researched value profiles of people in Finland. Exhibition visitors help the siblings to make choices in their everyday lives and, at the end of their visit, visitors receive feedback on the choices they made throughout the exhibition.

Seven Siblings from the Future inspires discourse about the future by increasing visitors' understanding of the impact their own lifestyles and choices will have on the future and of the values that shape these choices. The motto of the exhibition is: Our future is formed by our own choices and actions. Seven Siblings from the Future expands perspectives and inspires discourse about the future and its many possibilities.

22 443
visitors
during 2017

510 visitors
/day





22 443
visitors
during 2017

510 visitors
/day

Viral!

28 January – 29 October 2017

Viral! is an exhibition about viral phenomena, ranging from viral infections to economic disasters, and from public protests to memes. The exhibition explores biological and social infections, and how they spread. It explores the contagion mechanisms related to disease, emotions and phenomena. Various phenomena work similarly regardless of whether they fall within epidemiology or social sciences. The exhibition was a coproduction between Heureka, Pavilhão do Conhecimento – Centro Ciência Viva in Lisbon, and La Cité des Sciences et de l'Industrie in Paris. The exhibition was constructed by the science centre in Lisbon.

Sensual Mathematics

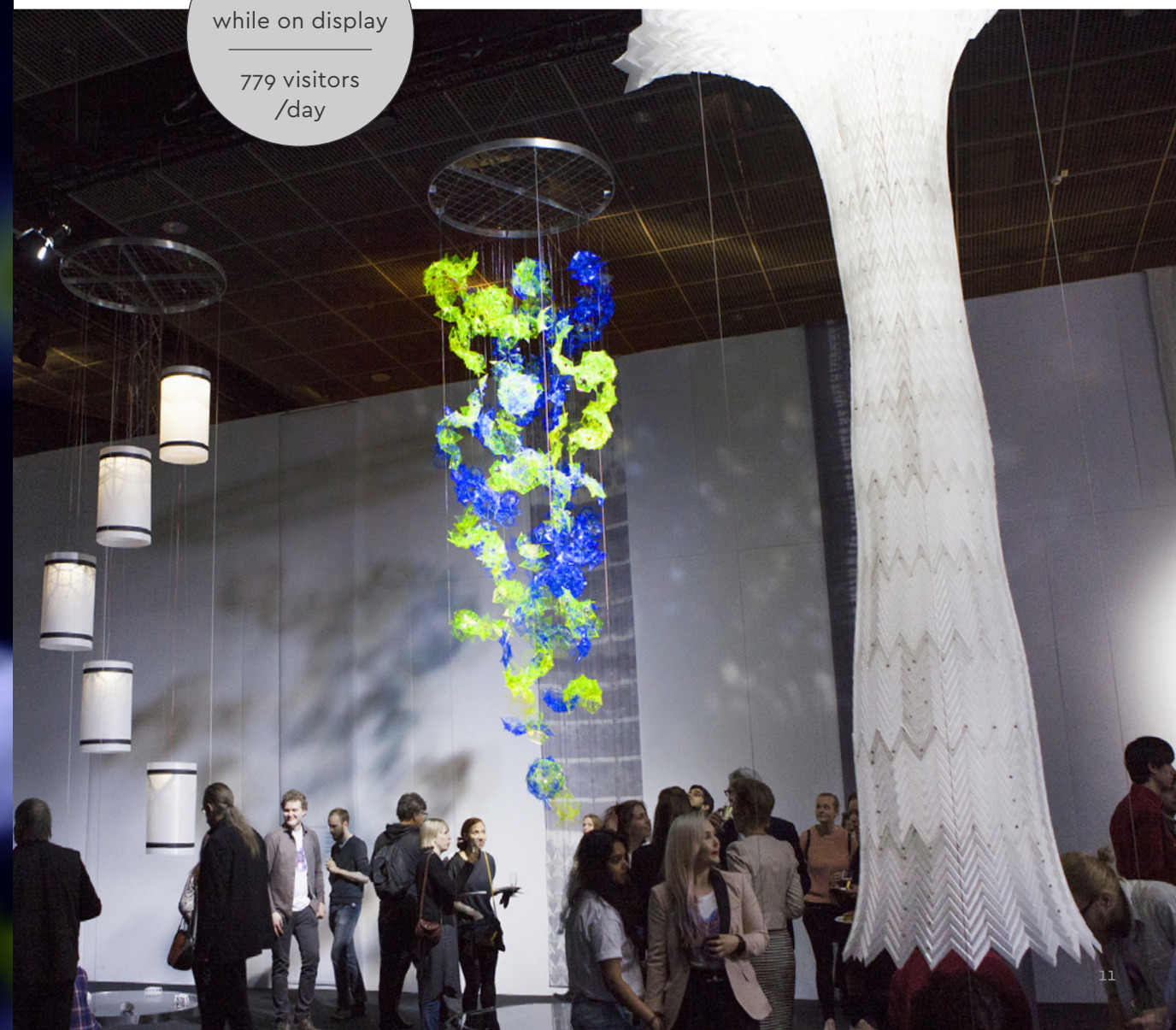
9 May – 22 October 2017

On display in Heureka's Event Square, this exhibition featured eight enormous sculptures. The works were created as the final exhibition for a transdisciplinary course at Aalto University entitled *Crystal Flowers in Halls of Mirrors – Mathematics meets Art and Architecture*. The course had 38 students ranging from freshmen to PhD students who broadly represented the different fields of scientific and artistic studies at Aalto University. Heureka participated in the course instruction by helping the students to understand the design and creation challenges involved in a public exhibition. This marked the first time that Heureka has hosted such a large exhibition entirely produced by students.

The works created a unique space through which visitors to Heureka walked as if through a forest. The works drew their inspiration from fractals, origami, musical scales as well as light and shadow. The sculptures brought maths and art together in a way that enabled for the study of, among other things, the relationships between natural structures and mathematics, perspective and three-dimensional form. Mathematical theories that are difficult to visualise were merged with beautiful forms and layers that anyone can appreciate. The exhibition was a concrete realisation of the dialogue between art and science, and it dispelled any prejudices regarding mathematics

130 151
visitors
while on display

779 visitors
/day



Electri City joins the main exhibition

The main exhibition in Cylinder Hall was renewed with the opening of the new electricity-based Electri City exhibition on 12 April 2017. The Electri City exhibition was realised as a part of the multi-year collaborative project by the Finnish Association of Electrical Safety (STEK) and Heureka. Other partners involved in creating the exhibition are the Finnish National Rescue Association SPEK, and Brammer Ltd. Electri City will be part of Heureka's main exhibition for at least three years.

Electri City gives visitors the opportunity to explore smart electricity in their daily lives. It demonstrates how electricity makes its way from the power station to our homes, what a smart home is like, and how we might use electricity smartly ourselves. The exhibition's escape room lets visitors assist two computer hackers to get through a three-day power failure. The exhibit 'Make electricity by lifting' enables visitors to test whether they are able to produce the amount of energy in the battery of a modern smartphone, and how fast an electric sauna stove would consume the same amount.

During the collaborative project, five exhibits illustrating electric phenomena were also produced for the Heureka Classics exhibition, as was a Pop-up Heureka programme entitled The Electrick Show. Additionally, the collaboration produced the 'Elektronman' and 'Wattityttö' learning materials.

Upcoming exhibitions in the planning

Mind Your Brain!

Heureka is working with the Finnish Brain Association to create an exhibition about the health and well-being of the brain. The Mind Your Brain! exhibition will open to the public in October 2018.

The exhibition is being planned with the idea that most visitors come to Heureka in some kind of a group, and rarely alone. The exhibition will be toured in groups of 2–5 visitors. At the beginning, the group literally picks up their exhibition brain and takes on the task of activating it. The brain becomes activated gradually as the group works together to do good things for it, such as moving, dancing and calming down. The message of the exhibition is that each of us has the opportunity to affect our own brain and that brain health is essential to our vitality.

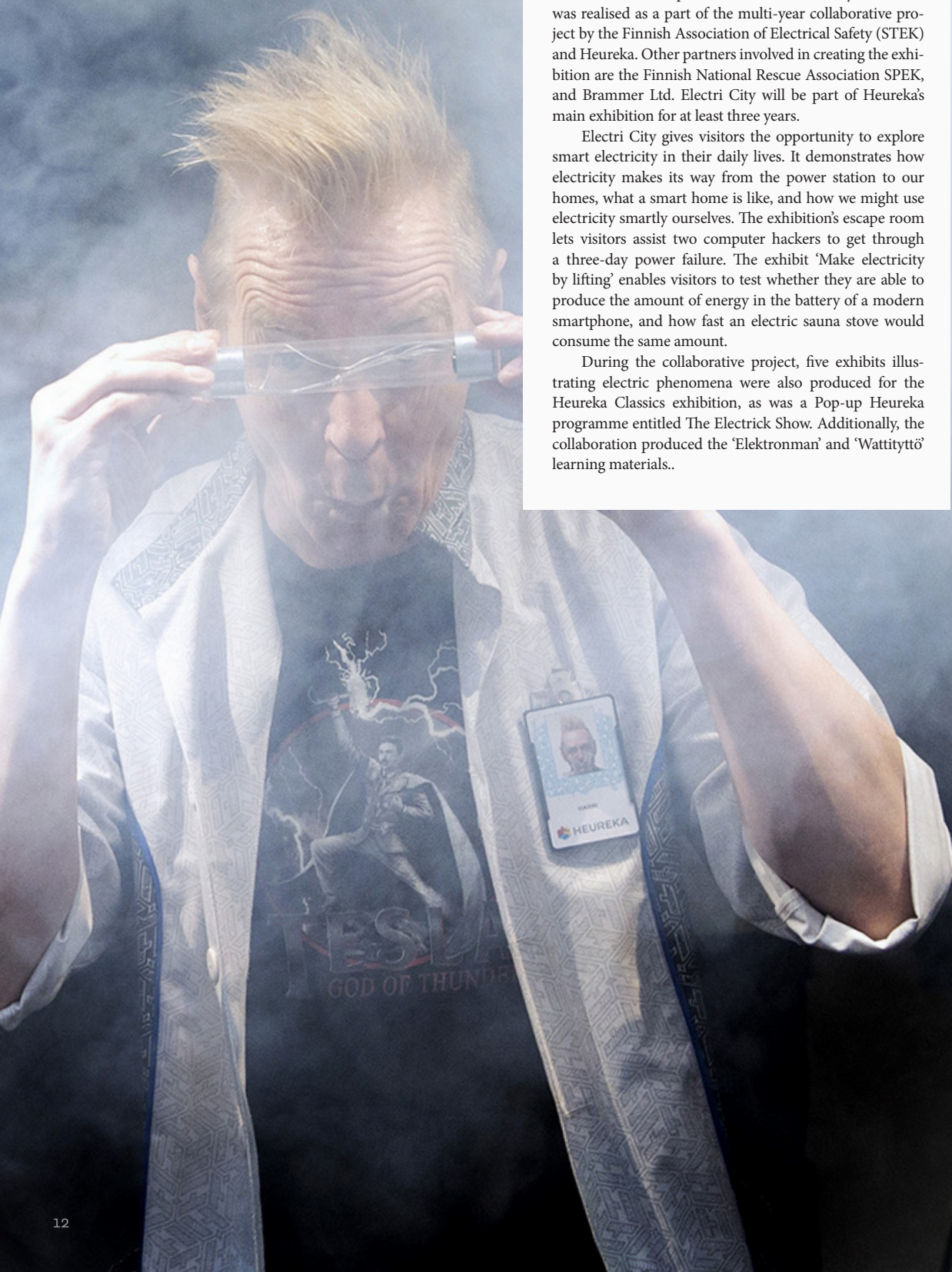
In the design phase of the exhibition, the concept and exhibit prototypes were tested with different visitor groups. The tests were conducted during autumn 2017 among more than fifteen groups ranging from school visitors to families and teams of adults. The test audience reactions to the teamwork and brain-activating activities

were unanimously positive. The tests also provided valuable information about any shortcomings in the exhibits and helped further the planning process.

Wood construction and circular economy

At the end of the autumn, collaboration initiated with the wood construction action programme of the Ministry of the Environment to realise an exhibition dealing with wood construction. The results of a visitor survey to examine visitors' interest and level of knowledge on the exhibition topic were presented to the key actors in the field at a seminar in December. The decision was made to continue with the planning of the exhibition during 2018.

Throughout the year, discussions were held and workshops arranged on the subject of circular economy with interested co-operative partners, and negotiations were conducted on the possibilities for ways to work with this theme at Heureka.





Pandat
 47 696 visitors in 2017
 44 visitors/show
 1 074 shows
 in total

Planetarium films, visitors and showings 2017

| Film | Visitors | Shows | Visitors/ show |
|--|----------|-------|-------------------|
| The Secret World of Moths (1 Jan. - 12 Oct.) | 19 062 | 606 | 31 |
| Pandas (28 Jan. - 31 Dec.) | 47 696 | 1074 | 44 |
| From Earth to Universe (1 Jan. - 31 Dec.) | 58 593 | 1021 | 57 |
| Phantom of the Universe (13 Oct. - 31 Dec.) | 244 | 244 | 40 |
| Dark Universe (1 Jan. - 16 Jan.) | 31 | 31 | 69 |
| Life of Trees (1 Jan. - 16 Jan.) | 20 | 20 | 48 |

Visitors in total: 138 112 | Shows in total: 2 996 | Visitors per show on average: 46

Planetarium programme

In 2015, the planetarium films were included in the cost of the Heureka admission ticket, and since then, the number of visitors to the planetarium has been steadily rising. In 2017, Heureka's planetarium films were viewed by more than 138,000 visitors, which is an average of 46 visitors per showing.

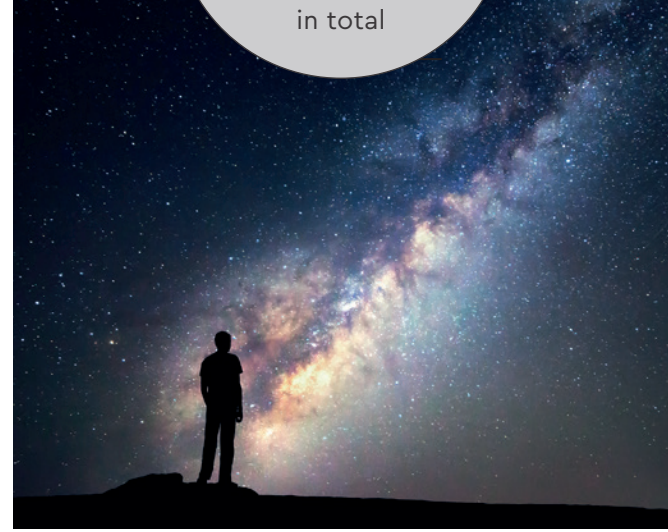
The majority of the planetarium's four films changed during 2017. *The Pandas* film premiered at the end of January, replacing *Dark Universe* and *Life of Trees* in Heureka's repertoire. October saw the premiere of *Phantom of*

the Universe, which replaced *The Secret World of Moths*. During 2017, the localisation work for the film *Incoming!* was also initiated. This film will replace *From Earth to the Universe* among Heureka's repertoire in January 2018. During 2017, Heureka was also involved in the production of a Finnish film about marine ecology, produced by Leading Note Pictures. The film will premiere at Heureka during June 2018.

The Secret World of Moths
 19 062 visitors in 2017
 31 visitors/show
 606 shows
 in total



From Earth to Universum
 58 593 visitors in 2017
 57 visitors/show
 1 021 shows
 in total



Yleisötapahtumat

Every year, Heureka organises public events meant to complement and delve further into Heureka's exhibition topics or current themes. The public events, arranged together with our co-operative partners, enrich Heureka's offerings during evenings and weekends, increase encounters between various actors, and reinforce visitors' understanding of the different topics. The total number of visitors who attended different public events organised at Heureka in 2017 reached approximately 17,000 people. The most popular event of the year was the Children's Medical Day.

8 April
H18:
Purely Animalistic
– adults' night
614 participants



| | |
|---------------------------------|---|
| 25–26 February | Would you eat a cricket? At this two-day event based on the theme of circular economy, Heureka's co-operative partners introduced participants to future sources of protein, primarily crickets, and different ways in which crickets can be used as a raw ingredient for the food industry. 1,200 participants. |
| 16 March | Segerman's lecture on four-dimensional space. An open lecture for the public related to the Crystal Flowers project of Aalto University. Approx. 50 participants. |
| 25 March | Children's Medical Day. A one-day event for the entire family that provided an introduction to medicine through workshops and experiential activities aimed at children. Co-operative partners included Pikkujätti Medical Center, Oral Hammaslääkärit dental clinics, and Duodecim. 3,660 participants. |
| 8 April | H18: Purely Animalistic. An evening for adults based on the Body Worlds – ANIMAL INSIDE OUT exhibition that gave participants an opportunity to learn more about the social and mating habits and reproductive systems of animals. 614 participants. |
| 9–10 May | Astronaut Timothy Kopra visits Heureka. Two-day visit by Finnish-born NASA Astronaut Timothy Kopra to share his experiences with students and Heureka's other visitors and the media in the form of a panel discussion and school group event. 254 participants. |
| 9 & 29 May, 8 August | World Biotech Tour – Take a Cellfie! workshop in the Idea Workshop. Upper secondary school students involved in the World Biotech Tour project shared their knowledge of biotechnology with the Heureka audience during the Take a Cellfie workshops. 300 participants. |
| 18 May | Intelligence Hunt Student Challenge Battle. A navigational mini-hackathon event, organised through co-operation with Seafocus. The participants in the project included three 16-person teams of university students. |
| 18 May | Cookies, crisps, oranges – how are they different geometrically? A workshop related to the Crystal Flowers project of Aalto University that enabled participants to understand the concept of curvature using a sheet of paper. Venue: Heureka's Idea Workshop. 60 participants. |
| 29 May | Accessible Joy of Science! A family event implemented through co-operation with the Rinnekoti Foundation and in honour of the foundation's 90th anniversary. 354 participants. |
| 10–12 June | Bio-time and plastic recycling event. Parked outside of Heureka, the Bio-time Tour truck offered visitors a chance to explore forestry solutions using a science centre exhibition approach. Additionally, visitors could learn about how plastics are collected and recycled. 1,500 participants. |
| 5–29 July | Eyewitness test. Heureka and Åbo Akademi University joined forces to create a participatory test for the public to determine reliable distances for eyewitness identification. 1,640 participants. |
| 29 September | NIGHT2017: Researchers' Night at Heureka. Researchers' Night, a European-wide science event, introduces the public at large and comprehensive school students to science and the work of researchers. 259 comprehensive school students and teachers participated. |
| 29–30 September | World Biotech Tour Festival. A two-day biotechnology festival, which included a Meet a Scientist Day for comprehensive school students on Friday, 30 September, and a WBT Family Day held on Saturday, 30 September. 1,400 participants. |
| 14–16 October | Space Truck in Heureka's yard. As part of the Suomi 100 satellite project, a touring space exhibition about space technology and research. 2,400 participants. |
| 28 October | H18: Halloween at Heureka. Halloween-themed evening event for adults in which science, horror and culture come together in a creepy way. 1,500 participants. |
| 25 November | Publication release and public event for the non-fiction book on climate change, Hyvän sään aikana. An event focused on climate change was realised through co-operation with the working group that wrote the book entitled Hyvän sään aikana. Heureka had 865 visitors on the day of the event. |
| 26 November | Lecture: Dark Matter in the Universe. Lecture by Postdoctoral Researcher Tommi Tenkanen from the Queen Mary University of London. A public lecture in Heureka's Event Square realised through co-operation with The Science Basement association. Heureka had 372 visitors on the day of the event. |
| 4 December | Space Day at Heureka. A space-themed day, organised through co-operation with the ESA and Nordic ESERO, that ended with a direct video connection to the International Space Station (ISS) and Astronaut Paolo Nespoli, who answered teachers' questions about life in space. 480 participants. |

Learning programmes and materials

Heureka's learning programmes are multidisciplinary services intended to motivate and inspire people to learn about different areas of science and technology and to reinforce the learning experience. The learning programmes, which develop broad-based competencies, are presented by Heureka's inspirers within the laboratories, workshops, Idea Workshop, Science Theatre, Pop-up Heureka and exhibitions, and at the Basketball Rats and Science On a Sphere exhibits. The learning programmes are generally booked in advance by schools and companies, but they are also presented to Heureka's visitors without advance booking on the weekends and during holidays. The mobile Pop-up Heureka science show ensures that Heureka's learning services also reach the public outside of Heureka's own facilities.

Heureka's learning materials include preliminary tasks, which are related to the exhibition and planetarium film themes and can be done prior to a visit, activities that can be performed at the exhibitions and tasks to complete following a visit. The objectives of the new national learning curricula concerning phenomenon-based approaches

and the development of broad-based competencies have been integrated into Heureka's learning services. The phenomenon-based incorporation of STEAM (Science, Technology, Engineering, Art and Mathematics) subjects into science and technology education, innovation process management, the development of problem-solving skills, the utilisation of information and communications technology and interaction-promoting methods was the guiding principle for the production of Heureka's learning programmes and materials in 2017.

Altogether 18 new learning programmes were produced, two of which were workshops produced on external funding for Science Sponsor class visits. Furthermore, two existing learning programmes were updated to correspond to the objectives of the new curricula. Background materials and tasks were offered online in connection with the exhibitions Wind in the Bowels, About a Coin, Body Worlds-ANIMAL INSIDE OUT, Seven Siblings from the Future as well as for Heureka's outdoor Bedrock exhibition and the Trail of useful plants.



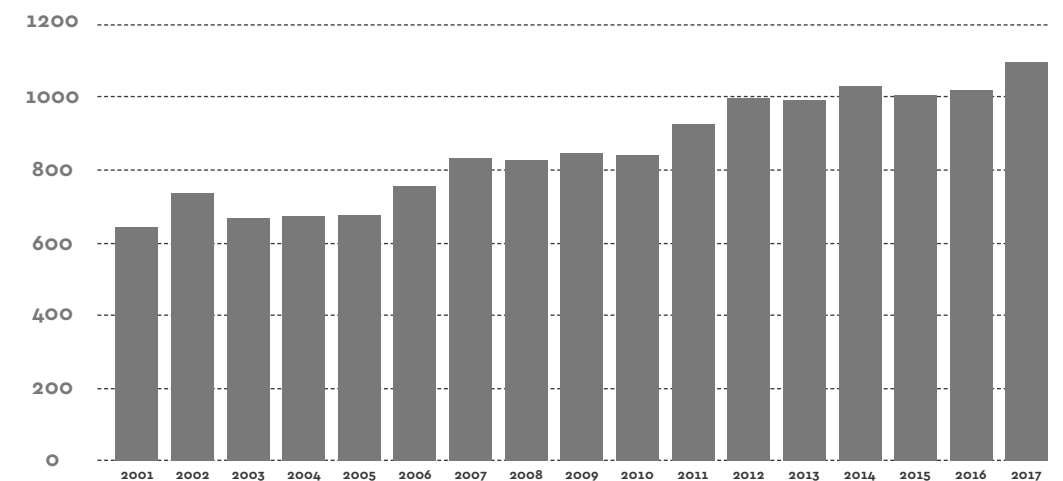
Idea Workshop

At the beginning of the year, the Idea Workshop for creative problem-solving opened in Heureka's Pillar Hall. The Idea Workshop is divided into two themes: introduction and challenges. The introduction section is comprised of three low-threshold exhibits, which encourage constructive thinking and hands-on experimentation. In the challenges section, the process of problem-solving and the actual building process are longer and more demanding. There are four challenges, and each area has room for a group of approx. 15 participants to work together. The challenges and facilities were designed in such a way that they can be easily set up again for the next visitors, and the tools and supplies have sufficient storage space. In appearance, the structures adhere to Heureka's overall look, with the addition of a joyful orange colour signifying a worksite, and the use of warm wood. The structures of the challenges were made to be mobile, so that they would correspond to the changing needs of the Event Square.

Science camps at Heureka

During the school holidays, Heureka organises multidisciplinary and experiential camps intended to inspire young people to get excited about science and technology and to encourage and promote scientific interests and hobbies. In 2017, science camps for children and youth aged 7-12 years were arranged as two-day camps during the winter holiday week (week 8) and as five-day camps for those aged 7-15 during the summer holiday. During the autumn holiday (week 42), Heureka arranged two-day science camps for children aged 7-12, as well as a one-day Donald Duck C.O.D.E. encoding camp (in Finnish). Heureka's science camps bring children and young people together to introduce them to scientific phenomena, in an interactive environment, through observation, research, experimentation, hands-on experiences, fun and discovery. In 2017, a total of nearly 1,260 children and youth participated in Heureka's science camps. Of that figure, nearly 1,071 participated in the camps that ran during the summer. The popularity of the summer camps has grown steadily. As a result of its expanded facilities, Heureka could further increase the number of participants at its camps.

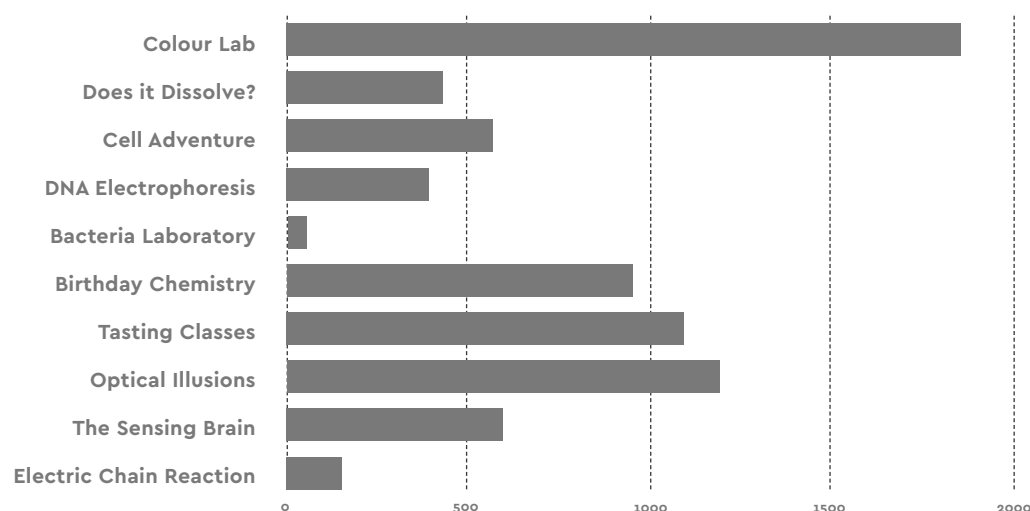
Numbers of summer science camp participants 2001-2017



Projects that advance learning

Heureka participates in national and international projects that advance learning and teaching. With consideration for the needs of future working life, the projects create models and methods for teaching broad-based competencies and skills. Heureka's project involvement in 2017 included the shared development project of DIT-Heureka and 6AIKA EduDigi, the StarT project coordinated by LUMA Centre Finland, and on the international level, the World Biotech Tour coordinated by the ASTC, the EU-funded Change project and the ESA-funded Nordic ESERO project.

Participants in pre-booked learning programmes during 2017



The learning programmes were arranged in the form of pre-booked shows, particularly intended for school groups, in Finnish, Swedish, English and Russian. The programmes were also presented as open demonstrations for public audiences during the weekends and holiday seasons. The programmes were held in the new Cell and Core laboratories as well as in the workshop areas. A total of more than 30,200 visitors to Heureka participated in the so-called walk-in programmes in our laboratories. Additionally, different presentations held at the Science On a Sphere exhibit attracted more than 1,200 visitors.

Sponsored classes at Heureka with the help of corporate support

In 2017, companies supported schools by sponsoring visits to Heureka through the long-established Science Sponsor programme. Additionally, the Henry Ford Foundation and Tieto Corporation each facilitated the visits of 100 classes to Heureka, including the coverage of the transportation, admission to Heureka and participation in a workshop designed through company collaboration. The Vällky workshops supported by the Henry Ford Foundation were conducted for 96 groups with a total of 2,120 students. By the end of the year, altogether 18 groups with a total of 394 students had participated in the 'How about the future?' workshops

designed through co-operation with the Tieto Corporation. The project will continue in 2018.

Science theatre shows and Basketball Rats in new facilities

The science theatre shows and the Basketball Rats gained brand new facilities within Heureka's expansion. Both now utilise the same performance space and audience seating. During 2017, the science theatre shows attracted more than 12,300 visitors. The games and feeding shows of the Basketball Rats were enjoyed by more than 20,000 Heureka visitors.



International Heureka

Heureka contributes to international science centre co-operation in order to maintain the high standard of its activities, to further develop the industry and to promote the export of its exhibitions and services.

Heureka has been active in promoting international co-operation in terms of exhibition production. The objectives of joint production are to increase the resources for planning, to share the production costs and to guarantee the broad international circulation of the exhibition without any need for interim storage.

November 2017 saw the opening at Heureka of the Viral! exhibition, which was produced within the European consortium together with the Pavilhão do Conhecimento – Ciência Viva in Lisbon and La Cité des Sciences et de l'Industrie in Paris. After being displayed at Heureka, Winter Games, the winter sports exhibition designed and produced by the Nordic consortium that included Heureka together with Experimentarium (Copenhagen), VilVite (Bergen) and the National Museum of Science and Technology (Stockholm), was put on display at the National Museum of Science and Technology in Stockholm.

Heureka was selected as one of the science centres to contribute to the World Biotech Tour (WBT) arranged by the ASTC and Biogen Foundation. Within this international collaborative project, science centres around the globe bring together upper secondary school students, teachers,

biotechnology experts and companies to discuss different aspects of biotechnology. From each of the 12 countries taking part in the initiative, one young ambassador participated in the Science Centre World Summit in Tokyo, Japan. Finland's representative was Ronja Holopainen.

Heureka is involved in the following joint undertakings initiated by European science centres, museums and their co-operative partners. These undertakings receive funding from the European Commission.

The **SPARKS** project highlights Responsible Research and Innovation (RRI) and its content theme is the use of new technologies in health and medicine. Heureka's participation in the project was visible to Heureka's visitors during autumn 2017 in the form of the Science Café that offered an opportunity to find out about and try out genetic testing. <http://www.sparksproject.eu>

BIOPHILIA KNOWLEDGE TRAIN is a shared Nordic learning project, undertaken on the initiative of the Icelandic musician Björk, which designs interdisciplinary workshops and trains teachers how to integrate art and science. The project brings together Nordic actors in science education to share their competence and learn from one another. In April 2017, Heureka took its theme-inspired workshops to the Faroe Islands. <http://biophiliaeducational.org>

Heureka is a member of the following international co-operation organisations:

Association of Science-Technology Centers (ASTC)

European Network of Science Centres and Museums (ECSITE)

Nordic Science Center Association (NSCF)

The Asia Pacific Network of Science & Technology Centres (ASPAC)

International Council of Museums (ICOM)

Giant Screen Cinema Association (GSCA)

Euromax

International Planetarium Society (IPS)

Immersive Media Entertainment, Research, Science & Arts (IMERSA)

Nordisk planetariumforening / Nordic Planetarium Association (NPA)

European Science Events Association (EUSEA)

Visitor Studies Association (VSA)

Heureka is a particularly active member within ASTC, ECSITE, and NSCF. Heureka's CEO is a Board member and treasurer of ECSITE, the Director of Communications and Services sat on NSCF's Board of Directors and the Experience Director served as chairman of ECSITE's annual conference programme committee and as a member of the scientific advisory committee of the Italian Museo delle Scienze (Trento).

Personnel and organisation

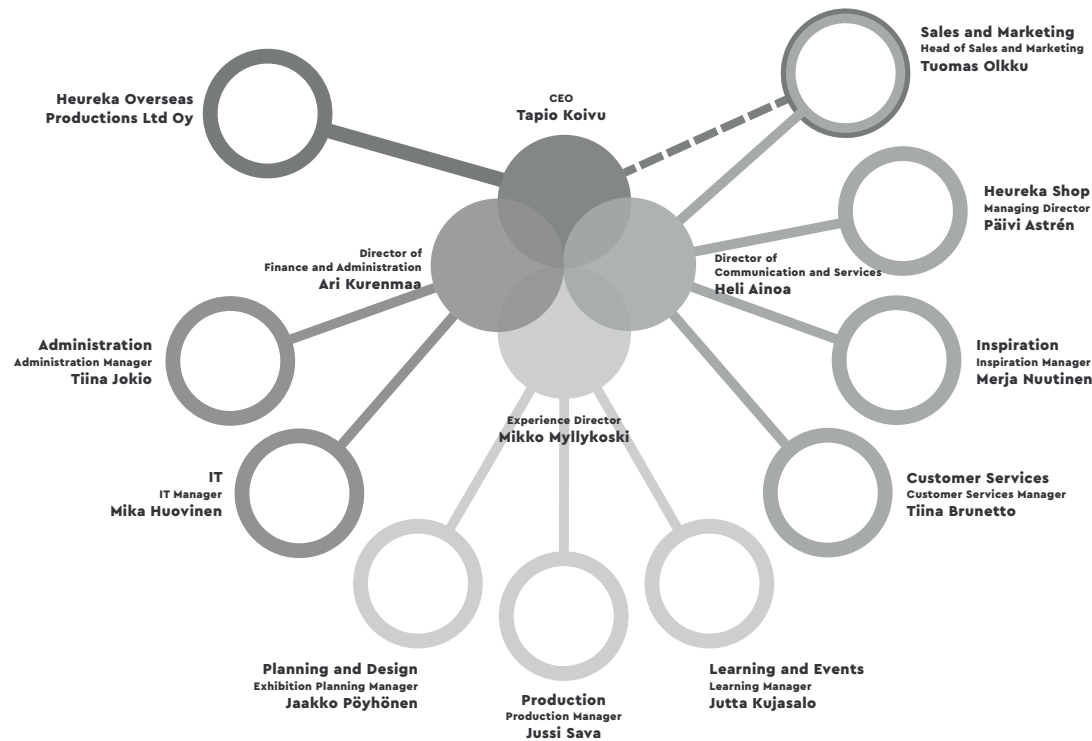
At the end of 2017, the Finnish Science Centre Foundation had a staff of 67 (64 in 2016) full-time employees, 3 (9) fixed-term employees and 19 (48) part-time employees. The reduction in the number of part-time employees is explained by the closing of the previous year's Dialogue with Time exhibition for which Heureka hired 30 dialogue guides over the age of 70.

The total number of person-years was 81 (77). At the end of the year, a total of 59 (60) persons were also working as volunteers; their annual input totalled 7,198 (6,495) volunteer hours. Additionally, several students and trainees and two non-military servicemen also worked at Heureka.

Personnel costs totalled 4.9 (4.6) million euro, which accounted for 44% (50%) of the total costs. The number of absences due to illness was 10 (6) days/person. The corresponding number of absences for all wage earners in Finland was 9.6 days (Statistics Finland, 2016).

In the autumn, Heureka initiated a Specialist Qualification in Product Development programme, in which six employees participated. The degree programme was organised through co-operation with Rastor Oy. In addition to the further and refresher training of the individual units, Heureka also continued to provide its one-hour Friday seminars to the entire personnel. These events serve as an important internal information and training component. A total of 35 Friday seminars were organised in 2017.

Heureka's organisation



Organisations represented in the Finnish Science Centre Foundation

| | |
|--|--|
| Aalto University | Ministry of Education and Culture |
| Central Organisation of Finnish Trade Unions | Ministry of Employment and the Economy |
| City of Vantaa | Ministry of Finance |
| Confederation of Finnish Industries, EK | Trade Union of Education in Finland |
| Federation of Finnish Learned Societies | University of Helsinki |

Board of the Finnish Science Centre Foundation in 2017

| | | |
|--------------------------------|---------------------------------|------------------|
| Thomas Wilhelmsson Chairman | Kimmo Kiljunen Vice Chairman | |
| Juha Antila | Kari Kinnunen | Jouko Narikka |
| Jan Edelmann | Pirjo Kutinlahti | Yrjö Neuvo |
| Pirita Hellberg | Markku Kuula | Jari Niemelä |
| Ilari Hetemäki | Marja Kyyrö | Kirsi Nousiainen |
| Erja Hilli | Erkki Laukkanen | Pasi Pesonen |
| Salla Hämeenniemi | Christian Leikkainen | Inkeri Ruokonen |
| Kirsi Jääskeläinen | Timo Leppä | Mia Salminvuori |
| Mervi Karikorpi | Tapio Lokki | Hannu Sariola |
| Maarit Karppinen | Mikko Mäkelä | Seppo Turkka |

Board of the Finnish Science Centre Foundation in 2017

| | |
|----------------------------|--------------------------------|
| Tapani Mäkinen Chairman | Sari Lindblom Vice Chairman |
| Susanna Aaltonen | Kaarina Suonperä |
| Jari Koivisto | Markku Leskelä |
| Jaakko Niinistö | Vesa Välimäki |
| Lea Ryyänen-Karjalainen | |

Heureka's honorary members 1989–2017

| | | |
|-------------------|--------------------|-------------------|
| Eeva Ahtisaari | Timothy Kopra | Simo Parpola |
| Kalevi Alén | Erkki Kurenniemi | Per-Edvin Persson |
| Kaarina Dromberg | Lauri Lairala | Maija Pohjakallio |
| Jan Fast | Olli Lehto | Yrjö Pessi |
| Leif Fast | Martti Lipponen | Harry Pyykkö |
| Paul Fogelberg | Olli Lokki | Timo Relander |
| Jarkko Hautamäki | Tapio Markkanen | Päivi Setälä |
| Erkki Huurtamo | Hannu I. Miettinen | Riitta Uosukainen |
| Jouko Joensuu | Carl G. Nordman | Paavo Uronen |
| Matti Karjalainen | Heikki Oja | Matti Virtanen |
| Toivo Katila | Ernst Palmén | Johan Wrede |

Finances

The Heureka Science Centre is run by the Finnish Science Centre Foundation. The financial standing of the Foundation relies heavily on independently earned income from admission and rental fees, fundraising and exhibition exports. In addition, the research information provided by the science community and the support offered by companies are of vital importance to Heureka's operations. Although the value of these activities is significant, they are not included (in monetary terms) in Heureka's financial statements.

Revenue from our own operations increased by 26 per cent, particularly as a result of the increase in the number of visitors. The admission yield thus increased significantly and represented a nearly 28 per cent share of the overall operational funding. The average admission fee per visitor increased by 8 per cent to 12.01 euro. The growing number of adult visitors accounted for the increase. The amount of funding from corporate co-operation and specifically targeted subsidies also increased in 2017. The general subsidy from the Ministry of Education and Culture was 2,608,000 euro. The City of Vantaa subsidi-

sed the operational costs with 3,503,617.55 euro.

The financial standing of the Finnish Science Centre Foundation weakened, and the closing balance showed a deficit of -294,043.32 euro. Consequently, the equity share of the balance sheet total was 23%, which signifies a decrease from the previous year (34%). The deficit was created, in particular, by the fact that the actual number of visitors fell short of the budgeted figure. The balance sheet total was 2,849,954.53 euro, which is at the same level as the previous year.

The Foundation has a credit limit of 600,000 euro, of which 424,010.54 euro had been used by the end of the year. The Foundation had been debt-free at the end of 2016, but during 2017, the net amount of debt accumulated to a total of 54% of its equity. The debt was created primarily through investments in the expansion and renewal that amounted to 850,000 euro.

The firm of authorised public accountants (KHT) BDO Oy served as auditors for the Finnish Science Centre Foundation, with Pertti Hiltunen, KHT, and Pekka Klemetti, KHT, as the responsible auditors.

Heureka's Financial Structure in 2017

| Independent operations | € | % |
|--|----------------------|--------------|
| Admission income | 3 017 447,86 | 27,8 % |
| Facility rentals | 425 750,89 | 3,9 % |
| Corporate co-operation | 179 964,77 | 1,7 % |
| Additional revenue from own operation | 744 985,94 | 6,9 % |
| Export income | 47 994,74 | 0,4 % |
| Other income | 309 939,35 | 2,9 % |
| Total | 4 726 083,55 | 43,6 % |
| Subsidies for ordinary operations | € | % |
| Support from the City of Vantaa | 3 503 617,55 | 32,3 % |
| General subsidy from the Ministry of Education and Culture | 2 608 000,00 | 24,1 % |
| Total | 6 111 617,55 | 56,4 % |
| Funding total | 10 837 701,10 | 100 % |

The key figures 2017

The key figures concerning activities are determined by the Letter of Intent between Heureka, the Ministry of Education and Culture and the City of Vantaa for the purpose of ensuring Heureka's activities. The target level is shown in brackets.

| The key figures concerning activities | 2017 |
|---|-----------|
| 1. Number of visitors to Heureka (>300,000) | 275 695 |
| 2. Number of school visitors (>55,000) | 48 721 |
| 3. Level of recommendation in visitor profile studies (> 82%) | 90 |
| 4. Visitors from outside of the Helsinki metropolitan area (> 50%) | 62,1 |
| 5. Visitors per full-time equivalent (> 3,500) | 3 408 |
| 6. Share of earned financing (>43%) | 43,6 |
| 7. Financial result (>0 euro) | -294 043 |
| 8. Solvency ratio (>20%) | 23,4 |
| 9. Targeted external funding (>500,000 euro/year entered into accounts) | 924 951 |
| 10. Total turnover of subsidiaries (>2.2 million euro) | 1 856 656 |

Profit and loss account of the Finnish Science Centre Foundation

| | 1 Jan. – 31 Dec. 2017 | 1 Jan. – 31 Dec. 2016 |
|---------------------------------------|-----------------------|-----------------------|
| Ordinary operations | | |
| Income | | |
| Admission receipts | 3 017 447,86 | 2 175 630,37 |
| Rental income | 425 750,89 | 464 040,14 |
| Corporate co-operation income | 179 964,77 | 148 029,04 |
| Other operating income | 1 100 293,87 | 976 282,64 |
| Total income | 4 723 457,39 | 3 763 982,19 |
| Expenses | | |
| Exhibitions and plannig | -2 936 252,24 | -1 916 218,87 |
| Production | -1 035 788,17 | -998 082,49 |
| Learning and events | -810 583,38 | -650 763,35 |
| Sales and marketing | -863 909,02 | -716 088,72 |
| Customer service | -383 613,20 | -378 167,70 |
| Inspiration | -628 648,02 | -579 045,86 |
| IT | -389 009,24 | -433 890,61 |
| Directors and administration | -1 288 543,02 | -1 179 938,02 |
| Real estate and park | -2 404 716,33 | -1 899 558,94 |
| Export expenses | -27 321,24 | -105 666,18 |
| Depreciations | -352 897,07 | -194 314,48 |
| Total expenses | -11 121 280,93 | -9 051 735,22 |
| Deficit | -6 397 823,54 | -5 287 753,03 |
| Other income | 1 980,40 | 982,64 |
| Financial income and expenses | -9 817,73 | -9 577,72 |
| Operating deficit | -6 405 660,87 | -5 296 348,11 |
| Subsidies | | |
| Government subsidies | 2 608 000,00 | 2 210 000,00 |
| City of Vantaa | 3 503 617,55 | 3 103 035,00 |
| Total subsidies | 6 111 617,55 | 5 313 035,00 |
| Surplus/Deficit for the period | -294 043,32 | 16 686,89 |

Balance sheet of the Finnish Science Centre Foundation

| | 31 Dec. 2017 | 31 Dec. 2016 |
|--------------------------------|---------------------|---------------------|
| Assets | | |
| Non-current assets | | |
| Intangible assets | | |
| Establishment expenses | 240 703,42 | 232 994,32 |
| Tangible assets | 1 588 904,80 | 1 089 690,99 |
| Shares and participations | 242 739,10 | 242 739,10 |
| Non-current assets | 2 072 347,32 | 1 565 424,41 |
| Current assets | | |
| Short-term receivables | 714 211,96 | 898 683,17 |
| Total cash in hand and at bank | 63 395,25 | 386 108,50 |
| Current assets | 777 607,21 | 1 284 791,67 |
| Assets | 2 849 954,53 | 2 850 216,08 |
| Equity and liabilities | | |
| Capital and reserves | | |
| | 666 735,24 | 960 778,56 |
| Liabilities | | |
| Long-term liabilities | 424 010,54 | 0,00 |
| Short-term liabilities | 1 759 208,75 | 1 889 437,52 |
| Equity and liabilities | 2 849 954,53 | 2 850 216,08 |

Support provided by companies, foundations and organisations

In all its experiential productions, Heureka relies heavily on support provided by universities, research institutes and other experts. Companies and foundations, in particular, provide support for Heureka's activities and projects, either directly in cash or indirectly in the form of expertise.

The funding provided by Heureka's external co-operative partners continued to increase during 2017. After a prolonged downward trend, the prospects for co-operation once again turned more positive and the yield from partnership experienced a tentative increase. Focus was placed on fund-raising by developing the operational model and portfolio selection for co-operation and by initiating co-operation with Lantern Ltd in the autumn. We anticipate that this co-operation will be reflected in our growing yield from the year 2018 onward.

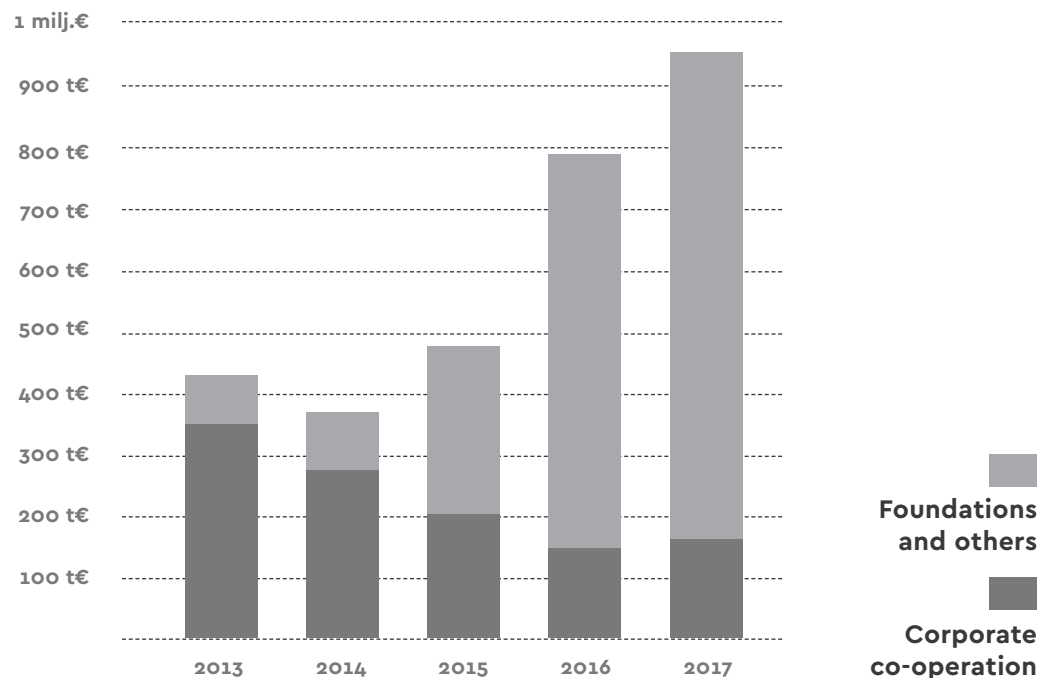
During the year, we completed several large co-operative projects, including the Seven Siblings from the Future exhibition produced through close collaboration

with SITRA, and the Electri City exhibition and related activities realised with the help of the Finnish Association of Electrical Safety (STEK).

The class sponsorship activities with funding provided by companies increased further. In 2017, companies supported schools by sponsoring visits to Heureka through the long-established Science Sponsor programme. Additionally, the Henry Ford Foundation and Tieto Corporation each facilitated the visits of 100 classes to Heureka and specially designed workshops. Altogether, corporate support ensured that 170 classes of a total of 3,970 students were able to visit Heureka during the year.

In addition to the aforementioned, Heureka also collaborated with dozens of other companies and organisations. Among those providing ongoing support were Aga, Finnish Brain Association, Lidl, the Mint of Finland, the Technology Industries of Finland Centennial Foundation, Vaisala and Veikkaus and the Jenny and Antti Wihuri Fund.

Support provided by companies, foundations and other parties for the years 2013–2017



The support for Heureka's activities provided by companies, foundations and other parties represents a significant portion of Heureka's fundraising. The support from foundations, organisations and funds as well as from companies increased in 2017.

The following companies and organisations supported the operation of Heureka in 2017

Academy of Finland

Association for Scientific Communications

ASTC & Biogen Foundation

ECSITE

ESERO/ESA

European Union/ERDF

Finnish Association of Electrical Safety (STEK)

Finnish Brain Association

Henry Ford Foundation

Jenny and Antti Wihuri Foundation

Lahti2017

Lidl Finland

Miina Sillanpää Foundation

Mint of Finland Ltd

Ministry of the Environment

Oral Hammaslääkärit Oyj

Oy Aga Ab

Pfizer Ltd

Pikkujätti Medical Centre for Children and Youth Ltd

Sinelli Oy

Technology Industries of Finland Centennial Foundation

The Finnish Medical Society Duodecim

The Finnish Innovation Fund SITRA

Tieto Corporation

Vaisala

Veikkaus Oy

Kiinteistö Oy Tiedepuisto

The Heureka property is owned by the real estate company Kiinteistö Oy Tiedepuisto, which is wholly owned by the City of Vantaa. The year 2017 was the first, nearly entire operational year in the newly expanded facilities. The expansion added 2,100 m² for an overall building total of 10,339 m².

The basic renovations to the property continued throughout the autumn of 2017. The renovation of the office and conference facilities started during 2017 and will be completed by spring 2018. At the beginning of 2018, the restaurant facilities will also undergo basic renovations and, starting in the summer, the focus of the renovations will shift to the necessary repairs to the roof.



Tiedekauppa Magneetti Ltd

Tiedekauppa Magneetti Ltd, owned entirely by the Finnish Science Centre Foundation, is an essential part of Heureka's service concept. The company has Heureka Shops operating within the science centre itself, at Kampi Shopping Centre in central Helsinki and at the Iso Omena shopping centre in Espoo. In addition to these, products were sold through the online shop to 28 European countries. The turnover of Tiedekauppa Magneetti totalled around 1.47 million euro in 2017.

To roll out the expansion plan created in the previous year, the company signed two new co-operative agreements in 2017. Amos Rex Shop will open in August 2018 at the new Amos Rex art museum in the Lasipalatsi building in central Helsinki. The co-operative agreement with Amos Anderson Glaspatset Ab, the company running the museum and related operations, made it possible for Tiedekauppa Magneetti to expand into the area of art in addition to science. Amos Rex Shop will sell products related to the exhibitions displayed at the Amos Rex art museum along with other general art products. A portion of Heureka Shop's current product selection is also suitable for sale in the Amos Rex Shop. Another new shop will

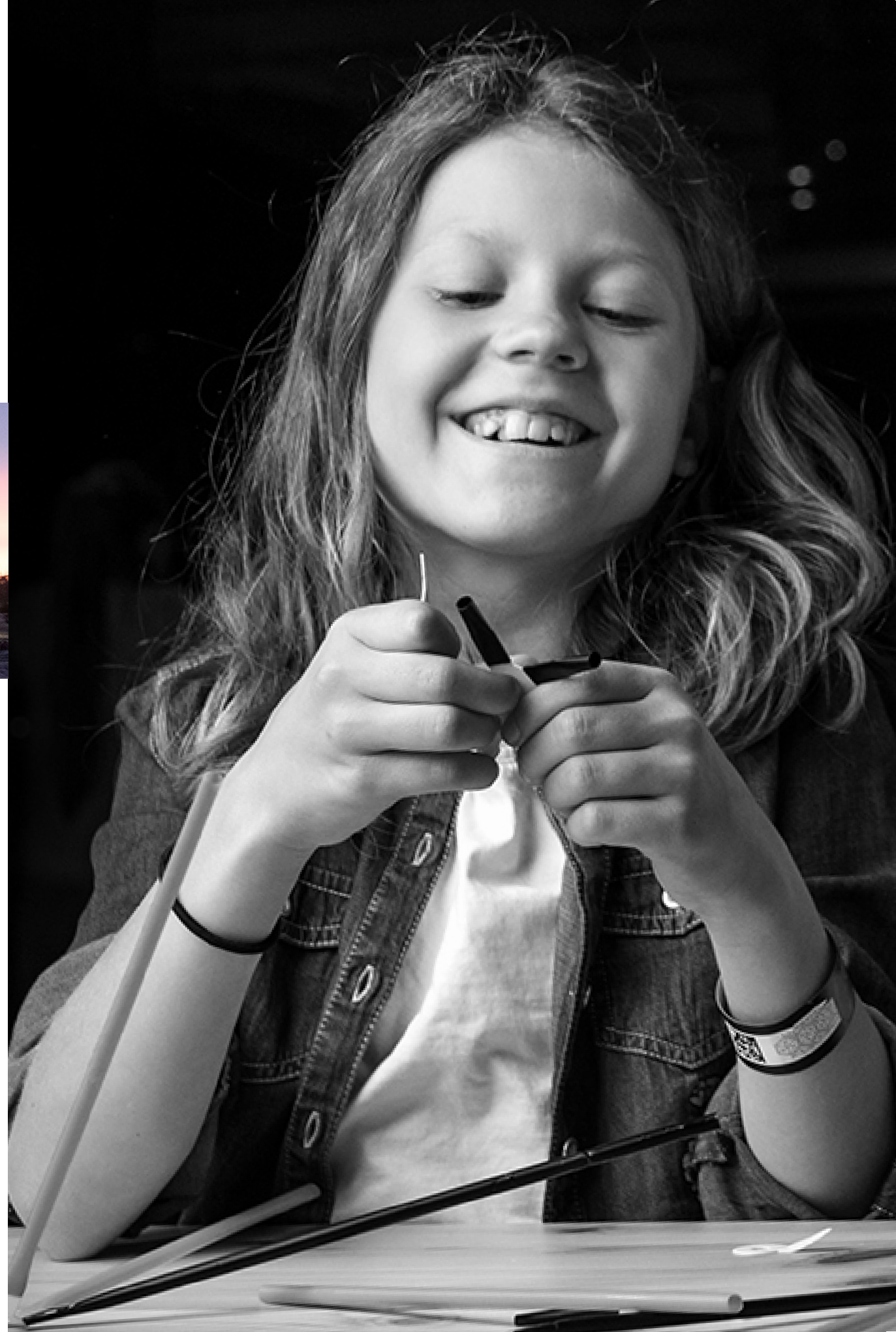
open in September 2018 in the REDI shopping centre, which is under construction at Kalasatama in Helsinki. Heureka Shop Redi is the sixth commercial location for Tiedekauppa Magneetti.

The entire company personnel participated in the three-phase service training arranged by the Academy of Philosophy during the spring. Additionally, digital and social media sales training was organised through co-operation with Rastor.

In autumn 2017, a customer satisfaction survey was conducted by the company to assess its service and products. The average rating given by customers increased over the previous year to be 4.2 on a scale of 1–5.

The planning work for the new Heureka Shop appearance got underway at the end of the year. The new look will correspond with Heureka's new brand image and the work will cover all of the company's commercial locations.

Suomen Asiakastieto Oy awarded the company a certificate in honour of their assessment as One of the Strongest (Vuoden Vahvimmat) in 2017. The award was given in recognition of the company's financial figures, positive background information and good payment practices.



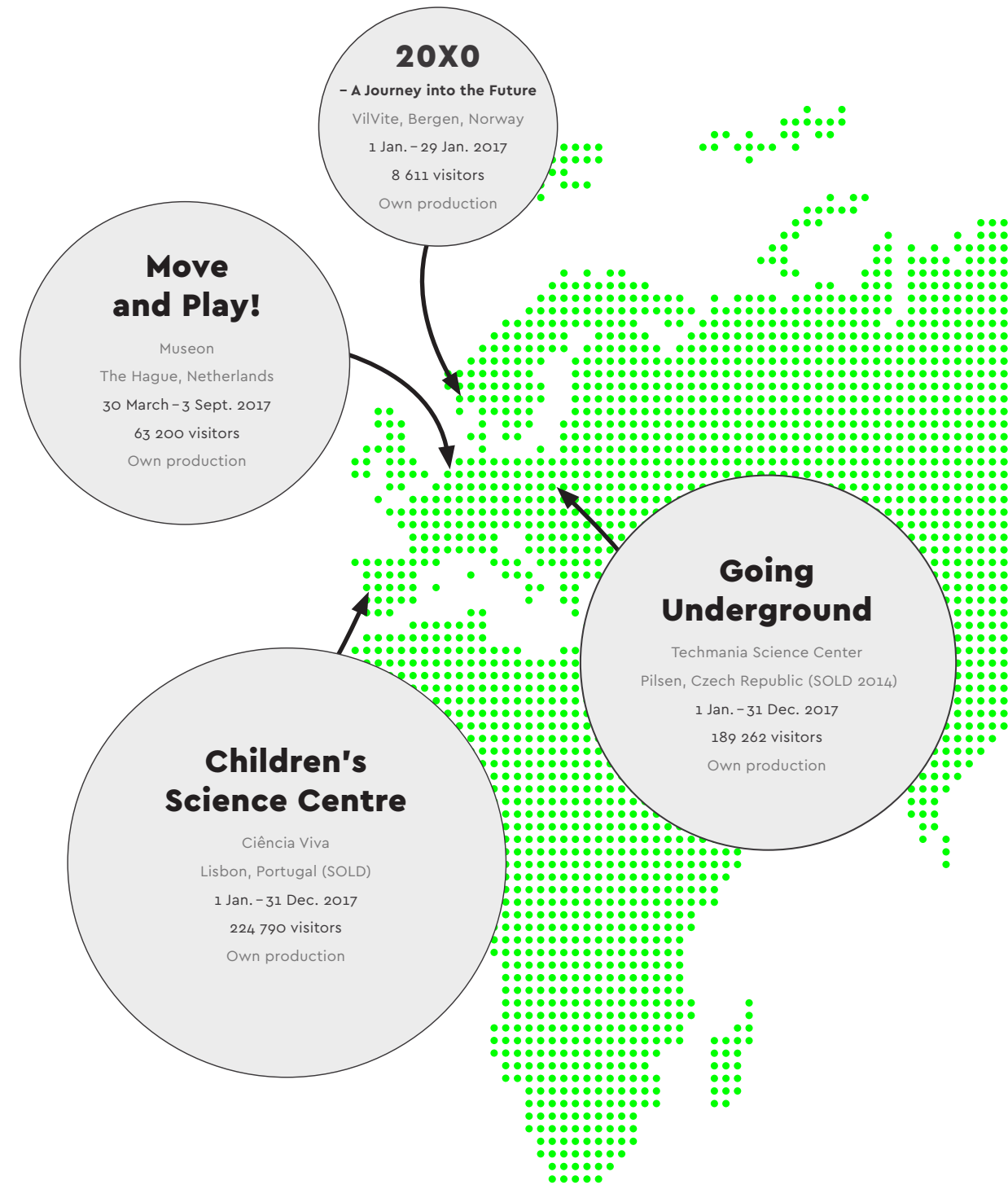
Heureka Overseas Productions Ltd Oy

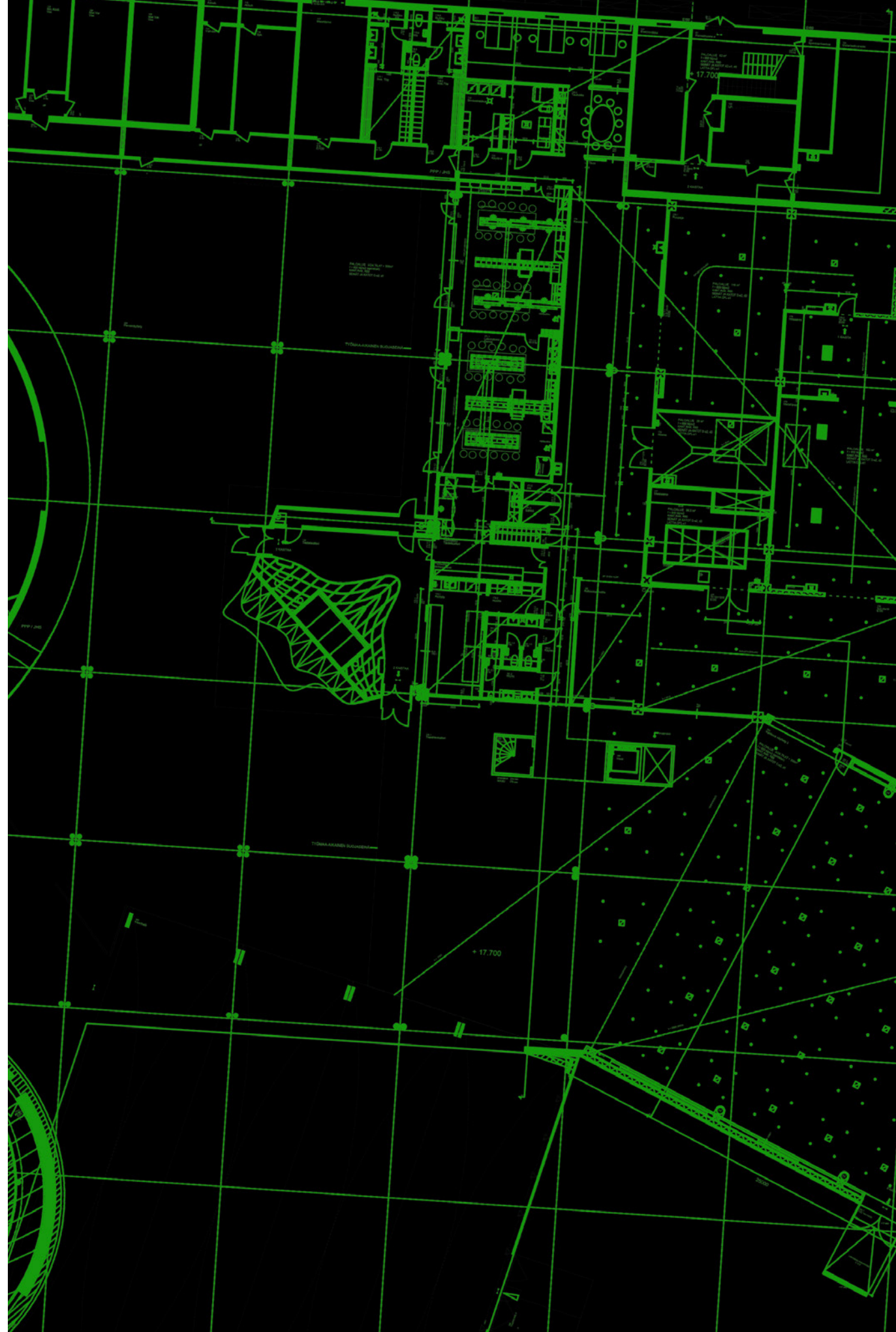
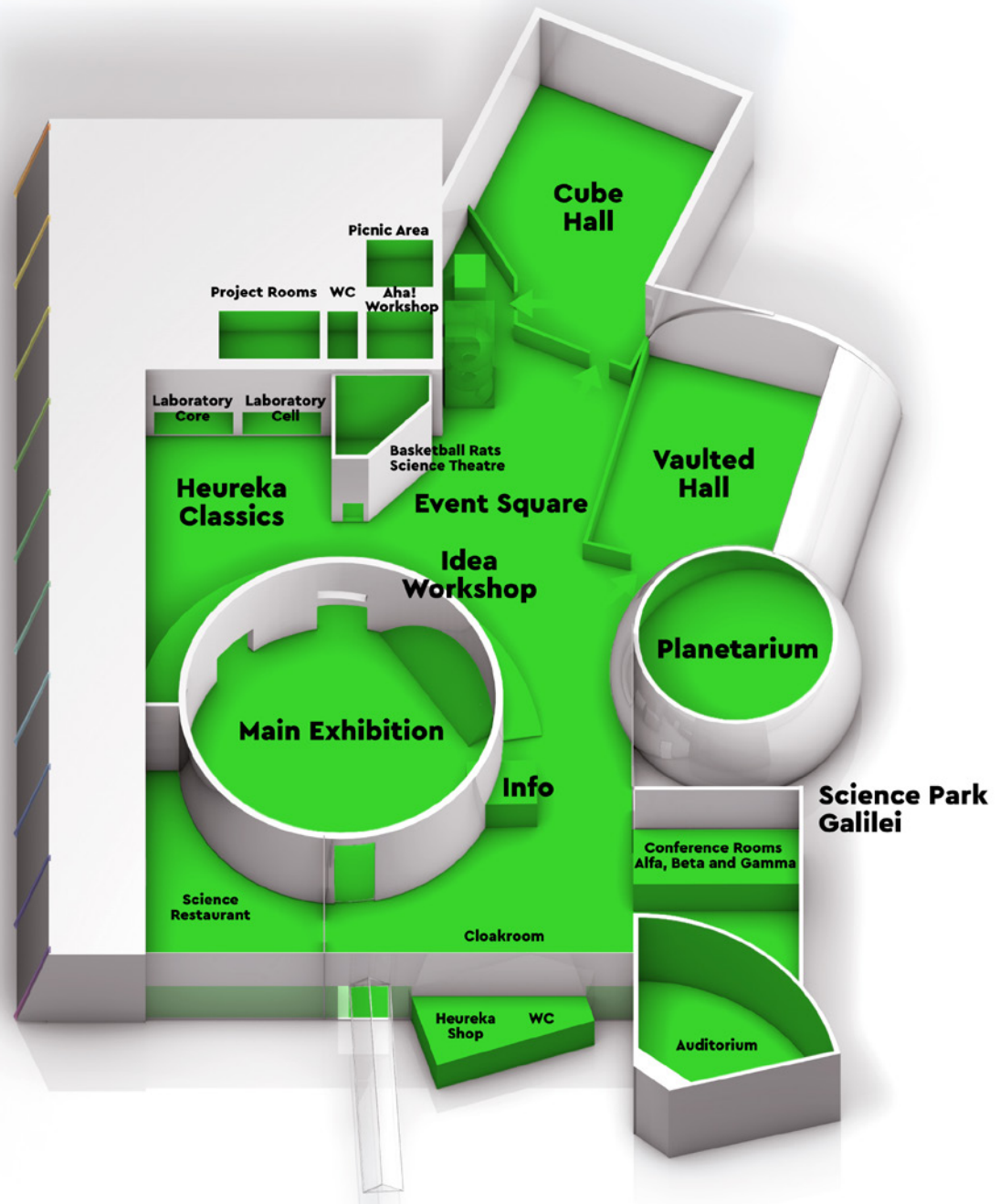
Heureka Overseas Productions Ltd Oy (HOP), a subsidiary owned by the Finnish Science Centre Foundation, supports the Foundation's activities through the rental and sale of exhibitions and individual exhibits produced by Heureka and other science centres. In 2017, the company's turnover totalled approximately 385,000 euro. As a result of HOP's activities, nearly 500,000 visitors visited Heureka's exhibitions abroad.

Heureka's own exhibition, **20X0 – A Journey into the Future** returned at the end of January, after being on display at VilVite Bergen Science Centre in Norway for almost a year. Additionally, Heureka's **Move and Play!** exhibition was on display at Museon in The Hague in the Netherlands from April to September.

HOP also marketed the **Winter Games** exhibition, which is a co-operative Nordic production, as well as the **Behind the Scenes** exhibition produced by the Estonian science centre, AHHA.

Heureka's exhibitions rented and sold during 2017
(total 485 863 visitors)







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