SELF-EVALUATION REPORT FOR MODULE 3

THE NAME OF THE UNIT BEING EVALUATED: Faculty of Civil Engineering

FORD: 2 - Engineering and technology

SOCIAL CONTRIBUTION OF THE EVALUATED UNIT

3.1 Introductory information about the unit under evaluation

The evaluated unit will describe its mission and vision and provide a general self-reflection of the societal contribution of R&D&I, along with its long-term goals in the fields it develops. The distribution of research activities by type of research will also be commented on.[1] The evaluated unit will describe its organisational structure and size (staffing, number of students, number of study programmes implemented, etc.) based on the data provided in annex tables 3.1.1 to 3.1.6.

Maximum 1000 words.

This is a non-rated indicator that serves as an introduction to the evaluated unit, providing context for data in indicators 3.2-3.7.

Self-assessment:

Our faculty is built on the pillars of tradition, quality, and perspective. With a rich three-hundred-year heritage, our objective is to be an exemplary institution that delivers top-notch education in civil engineering, architecture, and geodesy. Our graduates are not only well-educated but also equipped with promising career prospects in their respective fields.

In addition to providing quality education, our faculty is deeply committed to scientific research, development, innovation, as well as artistic and creative endeavours. Through these activities, we actively contribute to the advancement of science and the development of cutting-edge technical solutions. We are proud to be one of the few Czech faculties that stand shoulder-to-shoulder with Europe's and the world's leading institutions in both fundamental and applied research. Our state-of-the-art laboratories in building structures and materials, water engineering, and the unique underground laboratory Štola Josef, along with our own observatory and engaging architectural studios, provide an excellent environment for student education, scientist training, and the implementation of our research projects.

The third pillar of our activities are services provided to governmental and municipal authorities (expert and consultancy activities) as well as various activities targeting the general public (popularization activities, university of the third age).

The Faculty of Civil Engineering (FCE) at the Czech Technical University (CTU) in Prague is one of the largest faculties within the university. The organization structure includes several key components:

- **Dean**: The head of the faculty, responsible for overall management and strategic direction.
- **Vice-Deans**: Appointed by the Dean, each Vice-Dean oversees specific areas such as education, research, development, and international relations.
- **Academic Senate**: A legislative body elected by the academic community, responsible for democratic control and management, including the election of the Dean.
- **Scientific Board**: Composed of faculty representatives and industry experts, this board directs the development and content of teaching and research activities.
- **Departments**: The faculty is divided into various departments, each specializing in different areas of civil engineering, architecture, and geodesy. These departments ensure high-quality instruction and research.

[1] Basic, applied, contract, artistic research (see Definition of Terms in Methodology HEI2025+).

The faculty offers a wide range of study programs, including 13 Bachelor's, 21 Master's, and 24 Doctoral degrees in Civil Engineering, Architecture, Geodesy, and related fields with more than 3000 students enrolled (2400 bachelors, 690 masters, 350 PhDs). The faculty employs a significant number of academic and administrative staff to support its operations and educational activities, including 58 full professors, 103 associate professors, 201 assistant professors, and 70 researchers in other categories. The increasing number of early career researchers (105 FTE) is helping to build the next generation of academic leaders and ensures the continuity of high-quality research and education at our faculty.

The key long-term research directions defined in the FCE Strategic Plan include:

- Integrated design of building structures;
- Reliability, durability and optimization of building materials and structures;
- Sustainable life cycle management of buildings, construction companies and sites and environmental aspects of the construction industry;
- Modelling of complex multi-physics processes and their applications in engineering;
- Digitalization and robotics in construction;
- Integrated water management and flood protection in sustainable development;
- Revitalization of water systems in landscapes and cities burdened by significant anthropogenic changes;
- Comprehensive technology innovation in geodesy and cartography;
- Geoinformation technologies - optimization of methods for the collection, use and presentation of geodata in surveying, landscape and urban engineering.

In 2023, government funding accounted for 62% of our total income, while research projects contributed 27%, and contracted research activities made up 11%. Regarding the distribution of research activities, basic research constituted 23%, applied research 58%, and contractual research 19% (source: 2023 FCE Annual report). The faculty has established long-term cooperation and partnerships with industry, including large construction companies, national bodies, and SMEs.

The national evaluation of the research institutions clearly shows that the research output of FORD 2.1 Civil Engineering at CVUT is on par with the EU and international standards. The Faculty of Civil Engineering is responsible for most of these outputs, with 61% of publication results indexed in Q1 journals and 81% in Q1+Q2 journals. Additionally, the publication productivity in Q1 publications is at 120% of the national level in this field (source: Bibliometrical Report, Research, Development and Innovation Council, Hodnocení výzkumu RVVI).
In the 2025 QS World University Rankings by subject, CVUT is ranked between 151-200 for Engineering - Civil & Structural, with a major contribution from the FCE. For Architecture and Built Environment, CTU is positioned between 151-200, a ranking achieved through a shared contribution with the Faculty of Architecture (source: QS World University Ranking by Subject 2025).

Table 3.1.1 - Staffing per FTE[2]

Academic/ Professional position	Total / Of which women					
	2019	2020	2021	2022	2023	Total
Professor	49.2/6.10	48.2/5.6	50.2/6.1	52.5/8710	54.3/8.10	254.2/33.0
Associate Professor	103.4/18.7	101.6/18.7	104.0/19.2	103.4/18.2	95.8/16.2	508.2/90.8
Assistant Professor	221.4/76.1	206.1/73.2	211.3/73.3	200.5/71.0	194.0/68.0	1033.4/361.6
Assistant	3.0/2.0	3.5/2.0	3.5/2.0	3.9/2.0	3.9/2.0	17.8/10.0

[2] The average number of hours worked is calculated as the ratio of the total number of hours actually worked during the reference period, from 1 January to 31 December, by all staff (including agreement on work activity, excluding agreement on work performance) to the total annual working time pool per full-time employee. The full- time status of the worker in the evaluated unit is always reported. If an employee holds more than one type of full-time job within the evaluated unit, the total sum of the two shall be reported.

R&D Personnel[3]	105.1/62.7	88.6/53.1	82.3/46.3	81.5/41.5	77.5/40.1	435.0/243.6
Researchers in other categories[4]	66.5/20.3	71.5/22.2	80.5/26.0	82.0/24.9	78.5/23.4	378.9/116.8
Technical and economic staff[5]	106.0/68.7	112.1/72.8	114.8/75.8	119.7/75.7	125.6/83.0	578.2/376.0
Scientific, research and development staff involved in teaching activities	373.8/97.3	355.2/94.0	364.6/95.1	357.2/92.8	346.4/90.8	1797.2/469.9
Early career researchers[6]	151.3/44.1	131.3/38.2	127.8/39.1	125.7/38.4	113.3/34.9	649.5/194.8
Total[7]	654.6/254.5	631.7/247.6	646.5/248.6	643.4/240.4	629.4/240.6	3205.7/1231.7

Note: The categories professor, associate professor, assistant professor, assistant, other scientific, R&D personnel, researchers in other categories and technical and economic staff are mutually exclusive, i.e. one staff member is reported under one category only. Scientific, research and development staff involved in teaching activities, as well as early career researchers are reported collectively for all the above-mentioned categories.

3.1.2 Age structure of R&D&I personnel of the evaluated unit and their structure by job title and gender in the year 2019 (numbers of physical employees and personnel)[8]

Academic/ professional position	Under 29 years		30-39 years old		40-49 years old		50-59 years old		60-69 years old		70 years and older	
	Total	Women	Total	Women	Total	Women	Total	Women	Total	Women	Total	Women
Professor	0	0	1	1	12	2	11	0	19	3	16	1
Associate Professor	0	0	9	0	39	6	31	5	23	9	23	1
Assistant Professor	2	0	106	33	90	21	35	19	30	14	7	4
Assistant	1	0	2	2	0	0	0	0	0	0	0	0
R&D Personnel[9]	21	9	32	13	20	12	23	20	27	18	18	7
Researchers in other categories[10]	48	17	50	16	9	2	5	0	5	0	5	0

[3] The category "R&D Personnel" includes technical and professional personnel who are not directly involved in R&D&I but are indispensable for the research activity (e.g. operators of research facilities).
[4] The category "Researchers in other categories" includes all other staff who cannot be classified under any of the above categories (e.g. independent researcher/scientist).
[5] Who participates in the management and support of R&D&I in the institution.
[6] See Definition of Terms in Methodology HEI2025+.
[7] Total is the sum of the categories: professor, associate professor, assistant professor, assistant, R&I personnel, researchers in other categories and technical and economic staff.
[8] The total number of employees/workers as of 31st December of the calendar year in question is to be entered, irrespective of the level of time worked, but only in an employment relationship (including agreement on work activity, excluding agreement on work performance). Other types of contractual relationships under the Civil Code that involve purchase of services are not included.
[9] The category "R&D Personnel" includes technical and professional personnel who are not directly involved in R&D&I but are indispensable for the research activity (e.g. operators of research facilities).
[10] The category "Researchers in other categories" includes all other staff who cannot be classified under any of the above categories (e.g. independent researcher/scientist).

Technical and economic staff[11]	0	0	0	0	2	0	5	2	1	1	1	0
Scientific, research and development staff involved in teaching activities	4	0	124	36	143	30	77	24	72	26	46	6
Early career researcher[12]	51	17	168	52	0	0	0	0	0	0	0	0
Total[13]	72	26	200	65	172	43	110	46	105	45	70	13

Note: The categories professor, associate professor, assistant professor, assistant, other scientific, R&D Personnel, Researchers in other categories and Technical and economic staff are mutually exclusive, i.e. one staff member is reported in only one category. The categories of scientific, research and development staff involved in teaching activities and early career researchers are reported collectively for all the above-mentioned categories.

3.1.3 Age structure of R&D&I personnel of the evaluated unit and their structure by job title and gender in the year 2023 (numbers of physical employees and personnel)[14]

Academic/ professional position	Under 29 years		30-39 years old		40-49 years old		50-59 years old		60-69 years old		70 years and older	
	Total	Women	Total	Women	Total	Women	Total	Women	Total	Women	Total	Women
Professor	0	0	0	0	13	3	15	2	16	1	18	3
Associate Professor	0	0	5	0	32	3	23	4	29	8	20	3
Assistant Professor	0	0	63	20	99	24	33	16	33	18	8	4
Assistant	0	0	5	2	0	0	0	0	0	0	0	0
R&D Personnel[15]	15	5	24	5	28	12	20	15	10	8	9	4
Researchers in other categories[16]	30	7	65	23	22	3	3	2	3	0	3	1
Technical and economic staff[17]	1	0	0	0	1	0	4	2	2	1	1	0
Scientific, research and development staff involved in teaching activities	0	0	77	22	149	31	71	22	78	27	46	10
Early career researcher[18]	30	7	138	45	0	0	0	0	0	0	0	0

[11] Who participates in the management and support of R&D&I in the institution.
[12] See Definition of Terms in Methodology HEI2025+.
[13] Total is the sum of the categories: professor, associate professor, assistant professor, assistant, R&I Personnel, Researchers in other categories and technical and economic staff.
[14] The total number of employees/workers as at 31.12. of the calendar year in question is to be entered, irrespective of the level of time worked, but only in an employment relationship (including agreement on work activity, excluding agreement on work performance). Other types of contractual relationships under the Civil Code that involve purchase of services are not included.
[15] The category "R&D Personnel" includes technical and professional personnel who are not directly involved in R&D&I but are indispensable for the research activity (e.g. operators of research facilities).
[16] The category "Researchers in other categories" includes all other staff who cannot be classified under any of the above categories (e.g. independent researcher/scientist).
[17] Who participates in the management and support of R&D&I in the institution.
[18] See Definition of Terms in Methodology HEI2025+.

Total[19]	46	12	162	50	195	45	98	41	93	36	59	15

Note: The categories professor, associate professor, assistant professor, assistant, other scientific, R&D personnel, researchers in other categories and technical and economic staff are mutually exclusive, i.e. one staff member is reported under one category only. Scientific, research and development staff involved in teaching activities, as well as early career researchers are reported collectively for all the above-mentioned categories.

Table 3.1.4 – Students

Type of study	2019		2020		2021		2022		2023		Total	
	Total	Women	Total	Women	Total	Women	Total	Women	Total	Women	Total	Women
Undergraduate	1999	793	2105	830	2333	893	2239	875	2482	985	11158	4376
Master's[20]	908	368	853	349	778	320	717	306	694	286	3950	1629
Doctoral	398	147	403	137	388	132	360	117	349	116	1898	649
Lifelong Learning Courses	212	143	381	278	337	204	431	306	437	306	1798	1237
Total	3517	1451	3742	1594	3836	1549	3747	1604	3962	1693	18804	7891

Table 3.1.5 - Study programmes in Czech/English

Type of study programme	Total[21] / Of which professional study programmes											
	2019		2020		2021		2022		2023		Total	
Undergraduate	8/1	2/0	10/2	2/0	11/2	2/0	9/2	2/0	9/1	2/0	47/8	6/0
Master's	8/1	0/0	10/1	0/0	9/1	0/0	9/2	1/0	17/3	1/0	53/8	2/0
Doctoral	20/5	0/0	29/7	0/0	38/13	0/0	39/9	0/0	36/10	0/0	162/44	0/0
Lifelong Learning courses	9/0	0/0	16/0	0/0	14/0	1/0	15/0	1/0	14/0	2/0	68/0	4/0
Total	45/7	2/0	65/10	2/0	72/16	3/0	72/13	4/0	76/14	5/0	330/60	12/0

Note: For each SP type, enter the number of SPs in Czech language in the first cell and insert the number of SPs in English language after the slash in the same cell (e.g. 15/3), enter the number of professional SPs in Czech language in the second cell and insert the number of professional SPs in English language after the slash. Follow a similar procedure in the last column of the table (Total).

3.1.6 – R&D&I capacities

R&D&I field	FORD	FORD share [%]	Predominant type of research	Total share of industry group [%]
1. Natural Sciences	1.1 Mathematics	3.60	Balanced basic and applied research	13.54
	1.2 Computer and information sciences	1.63	Applied Research	

[19] Total is the sum of the categories: professor, associate professor, assistant professor, assistant, R&I personnel, researchers in other categories and technical and economic staff.

[20] All master's degree students are listed, regardless of the length of their programme of study.

[21] The total number of study programmes for which admissions have been announced in a given academic year.

	1.3 Physical sciences	1.24	Applied Research	
	1.4 Chemical sciences	0.17	Applied Research	
	1.5 Earth and related environmental sciences	6.72	Applied Research	
	1.6 Biological sciences	0.00	Zvolte položku.	
	1.7 Other natural sciences	0.18	Applied Research	
2. Engineering and Technology	2.1 Civil engineering	60.08	Balanced basic and applied research	78.74
	2.2 Electrical engineering, Electronic engineering, Information engineering	0.67	Applied Research	
	2.3 Mechanical engineering	0.90	Applied Research	
	2.4 Chemical engineering	0.05	Applied Research	
	2.5 Materials engineering	12.94	Balanced basic and applied research	
	2.6 Medical engineering	0.03	Applied Research	
	2.7 Environmental engineering	2.80	Applied Research	
	2.8 Environmental biotechnology	0.00	Zvolte položku.	
	2.9 Industrial biotechnology	0.00	Zvolte položku.	
	2.10 Nanotechnology	0.05	Applied Research	
	2.11 Other engineering and technologies	1.22	Applied Research	
3. Medical and Health Sciences	3.1 Basic medicine	0.00	Zvolte položku.	0.36
	3.2 Clinical medicine	0.00	Zvolte položku.	
	3.3 Health sciences	0.00	Zvolte položku.	
	3.4 Medical biotechnology	0.36	Applied Research	
	3.5 Other medical sciences	0.00	Zvolte položku.	
4. Agricultural and veterinary sciences	4.1 Agriculture, Forestry, and Fisheries	1.64	Applied Research	1.64
	4.2 Animal and Dairy science	0.00	Zvolte položku.	
	4.3 Veterinary science	0.00	Zvolte položku.	
	4.4 Other agricultural sciences	0.00	Zvolte položku.	
5. Social Sciences	5.1 Psychology and cognitive sciences	0.11	Applied Research	1.96
	5.2 Economics and Business	0.59	Applied Research	
	5.3 Education	0.64	Applied Research	
	5.4 Sociology	0.01	Applied Research	
	5.5 Law	0.23	Applied Research	
	5.6 Political science	0.00	Zvolte položku.	
	5.7 Social and economic geography	0.22	Applied Research	
	5.8 Media and communications	0.16	Applied Research	
	5.9 Other social sciences	0.00	Zvolte položku.	
6. Humanities and the Arts	6.1 History and Archaeology	0.64	Applied Research	3.74
	6.2 Languages and Literature	0.00	Zvolte položku.	
	6.3 Philosophy, Ethics and Religion	0.01	Applied Research	
	6.4 Arts (arts, history of arts, performing arts, music)	2.61	Balanced basic and applied research	
	6.5 Other Humanities and the Arts	0.48	Applied Research	
	Total	100 %	-	100 %

RECOGNITION BY THE RESEARCH COMMUNITY

3.2 Recognition by the research community

The evaluated unit will briefly comment on its position in the research community. It shall consider individual and other prestigious R&D&I awards, participation of its academic staff in the editorial boards of international scientific journals, elected membership in professional societies, major invited lectures given by the evaluated unit's academic staff abroad or by foreign scientists and other relevant guests at the evaluated unit. Additionally, it will address the involvement of staff in the evaluation of national or European project/programme calls over the period of 2019–2023 based on the data provided in annex tables 3.2.1 to 3.2.5 (max. 10 most relevant items). If necessary, the evaluated unit shall list any additional services to the scientific community that it considers relevant.

Maximum 1000 words.

Self-assessment:

Many faculty members are distinguished experts in various disciplines. This is documented by selected prestigious awards and elected memberships in international organizations and bodies:

- Prof. Jan Vítek has been active in the International Federation for Structural Concrete (fib) since 1995. In the period 2010–2023 he was convenor of the Task Group on Serviceability of Concrete Structures. For the periods 2016-2020 and 2020-2023 he was elected for two 4-year terms as convenor of Commission 2 - Analysis and Design. In 2021 he was awarded the title of "Honorary Life Member of fib".
- Prof. Petr Hájek, received the Medal of Merit (2020) from the International Federation for Structural Concrete (fib).
- Prof. František WALD, was elected President of the European Convention for Constructional Steelwork, ECCS Brussels, 2023.
- Prof. Ivan Vaníček, served as the Vice-President for Europe in the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE), 2019-2023.
- Prof. Lena Halounová, has been elected President of ISPRS (International Society for Photogrammetry and Remote Sensing, www.isprs.org), as the first woman and the first citizen from the former Eastern block to hold this important position, 2022-2026.
- Doc. Jan Pruška, represented the Czech Republic in ELGIP (European Large Geotechnical Platform), 2021 – 2023.
- Dr. Martin Vonka and Mgr. Michal Horáček, working on the theme of factory chimneys as an endangered type of cultural heritage and trying to bring it to the attention of the general public, have won the "Patrimonium pro futuro" award in the presentation and popularization category, awarded by the National Heritage Institute.

Faculty members served on the editorial boards of recognized international scientific journals (>50) and delivered invited lectures at international conferences and institutions (58). At the same time, more than 30 invited lectures were given at our faculty by recognized international experts. Several faculty members received recognition from national funding agencies (GACR, TACR) for excellent projects (8).

Many have participated as evaluators of national or European programme calls (>30), as illustrated by selected examples in Table 3.2.5 below.

The Faculty actively supported the scientific community by organizing several national and international scientific events, including

- IABSE Symposium Prague 2022, jointly organized by the Czech Group of IABSE and FCE, 2022, https://www.iabse.org/prague2022
- iiSBE Forum of Young Researchers in Sustainable Building, organized by FCE under auspices of iiSBE A&R Forum, 2019, 2022, https://cesb.cz/yrsb/
- Central Europe towards Sustainable Building 2019: co-organized by FCE under auspices of iiSBE, 2019, https://19.cesb.cz/
- International Colloquia on Stability and Ductility of Steel Structures 2019, organized by FCE, 2019.
- 14th International Conference on Local Mechanical Properties 2019, co-organized by FCE, 2019, http://lmp-conference.cz/

- International Conference on Lightweight Structures Architecture 2020, co/organized by FCE, 2020, https://alk--20.wixsite.com/alk20?lang=en

As a notable service to the research community, faculty members maintain the largest creep and shrinkage database for structural concrete, covering 1,468 creep tests and 3,569 shrinkage tests since 1936. It is used by the community for benchmarking and model calibration (https://doi.org/10.5281/zenodo.8150176).

The Faculty is the publisher of the open-access Civil Engineering Journal (CEJ, ISSN: 1210-4027, indexed in ESCI & SCOPUS), since 2002. This journal serves as a platform for international scientific communication and result dissemination (https://lfgm.fsv.cvut.cz/CivilEngineeringJournal/index.html).

Table 3.2.1 - Prestigious R&D&I awards granted during the evaluation period

Name, surname and title(s) of the evaluated unit's staff member	Name of the award	Awarding institution
Martin Kružík, prof. RNDr., Ph.D.	Senior Research Fellow (2022)	The Erwin Schrödinger International Institute for Mathematics and Physics (ESI)
Martin Doškář, Ing., Ph.D.	CEACM Young Researcher Award for the best Ph.D. thesis (2019)	Central European Association in Computational Mechanics
Marek Tyburec, Ing., Ph.D.	Joseph Fourier Prize for Computer Sciences – Special IT4Innovations Prize (2022)	Embassy of France, Atos, IT4 innovations
Martin Ladecký, Ing., Ph.D.	Dr.-Klaus-Körper Prize (2023)	German Association of Applied Mathematics and Mechanics (GAMM)
Petr Hájek, prof. Ing., CSc.	Medal of Merit (2020)	fib - International Federation for Structural Concrete
Jan Vitek, prof. Ing., CSc.	Honorary life member of *fib (2021)*	International federation for structural concrete (*fib*)
Rostislav Šulc, Ing., Ph.D.	TAČR Award 2023 in the BUSINESS category for cooperation on the Autonomous Robotic Building System project TH04010329	Technology Agency of the Czech Republic (TAČR) https://tacr.gov.cz/den-ta-cr-2023-veda-neni-sci-fi/
Petr Konvalinka, prof. Ing., CSc., FEng.	Werner von Siemens Gold Medal (2019)	Siemens ČR
Martin Vonka, doc. Ing. Ph.D and Michal Horáček, Mgr.	Patrimonium pro futuro (2022)	National Heritage Institute
Jiří Cajthaml, prof. Ing., Ph.D. et.al.	Award of the Academy of Sciences of the Czech Republic for outstanding results in research, experimental development and innovation (2019).	Academy of Sciences of the Czech Republic

Note: Provide up to 10 examples.

Table 3.2.2 Participation of academic staff of the evaluated unit in editorial boards of international scientific journals during the evaluation period

Name, surname and title(s) of the evaluated unit's staff member	Name of scientific journal, ISSN

Josef Křeček, doc. Ing., CSc.	International Soil and Water Conservation Research, ISSN: 2095-6339, https://www.keaipublishing.com/en/journals/international-soil-and-water-conservation-research/editorial-board/, IF 7.3
Milan Jirásek, prof. Ing., DrSc.	Cement and Concrete Research., ISSN: 0008-8846, https://www.sciencedirect.com/journal/cement-and-concrete-research/about/editorial-board, IF 10.9
Petr Kabele, prof. Ing., Ph.D.	Cement and Concrete Composites, Print ISSN: 0958-9465 Online ISSN: 1873-393X, https://www.sciencedirect.com/journal/cement-and-concrete-composites/about/editorial-board, IF 10.8
Lena Halounová, prof. Ing., CSc.	ISPRS Journal of Photogrammetry and Remote Sensing, ISSN 0924-2716, https://www.isprs.org/news/newsletter/default.aspx, IF 10.6
Karel Kabele, prof. Ing., CSc.	Energy & Buildings, ISSN 0378-7788 and 1872-6178, https://www.sciencedirect.com/journal/energy-and-buildings/about/editorial-board, IF 6.6
Jaroslav Kruis, prof. Ing., Ph.D.	Advances in Engineering Software, ISSN 0965-9978, https://www.sciencedirect.com/journal/advances-in-engineering-software/about/editorial-board, IF 4.0
František WALD, prof. Ing., CSc.	Journal of Constructional Steel Research, ISSN 2093-6311, https://www.sciencedirect.com/journal/journal-of-constructional-steel-research/about/editorial-board, IF 4.0
Jaromír Dušek, prof. Ing., Ph.D.	Journal of Hydrology and Hydromechanics, ISSN 0042-790X, http://www.uh.sav.sk/jhh/Journal-information/Associate-Editors, IF 2.3
Bořek Patzák, prof. Dr. Ing.	Computers & Structures, Elsevier, ISSN 0045-7949 , https://www.sciencedirect.com/journal/computers-and-structures/about/editorial-board, IF 4.4
Jan Zeman, prof. Ing., Ph.D.	Acta Mechanica, Springer Nature, ISSN 0001-5970, https://link.springer.com/journal/707/editorial-board, IF 2.3

Note: Please provide up to 10 examples of academic staff participation in editorial boards of international scientific journals (e.g. editor, editorial board member, etc.).

Table 3.2.3 The most important invited lectures delivered by the academic staff of the evaluated unit at foreign institutions during the evaluation period

Name, surname and title(s) of the evaluated unit's staff member	Invited lecture title	Name of host institution, or name of conference or event	Year
Martin Kružík, prof. RNDr., Ph.D.	Derivation of von Kármán Plate Theory in the Framework of Three-Dimensional Viscoelasticity	Conference on Calculus of Variations in Schiermonnikoog 2019	2019
Michal Jandera, prof. Ing., Ph.D.	Resistance of Eccentrically Connected Gusset Plates in Compression	Structures Congress 2022. Reston, Virginia: ASCE	2022
Jan Zeman, prof. Ing., Ph.D.	Wang Tiles for Exploring and Manufacturing Modular Metamaterials	ECCOMAS Congress 2022, Oslo, Norway	2022
Petr Hájek , prof. Ing., CSc.	Changing Climate and Sustainability of Built Environment	IABSE Congress 2023 – Delhi, India	2023
Pavel Krejčí, doc. RNDr., CSc.	A Tumor Model Represented as a Multicomponent Deformable Porous Medium	PHAse field MEthods in applied sciences PHAME 2022, Rome, Italy	2022
Ivan Vaníček, prof. Ing., DrSc.	Present Demands on Earth Structures in Transport Engineering in Europe	Chicago - online: 4th Int. Congress on Transportation Geotechnics (Illinois edu) + ISSMGE	2021

David Stránský, doc. Ing., Ph.D.	Sustainable Stormwater Management – Blue-Green Infrastructure, (on-line)	Lund University, Sweden	2021
Lukáš Fiala, Ing., Ph.D.	Application of Zero Cement in Civil Engineering Materials	National Ilan University, Taiwan	2023
Vojtěch Bareš, Ing., Ph.D.	How Can Urban Water Management Benefit from High Coverage by Cellular Networks?	Symposium on the hydrometeorological usage of data from commercial microwave link networks, Karlsruhe Institute of Technology	2019
František WALD, prof. Ing., CSc.	Component Based Finite Element Design of Steel Joints	Ernst und Sohn on line seminars, 29 October 2020 www.ernst-und-sohn.de/en/stco-seminar	2020

Note: Provide up to 10 examples.

Table 3.2.4 - The most important lectures by foreign scientists and other guests relevant to R&D&I at the evaluated unit during the evaluation period

Name, surname and title(s) of the lecturer	Lecturer's employer at the time of the lecture	Invited lecture title	Year
Daya Reddy, prof.	University of Cape Town, South Africa	Some mathematical aspects of models of strain-gradient plasticity	2020
Zdeněk P. Bažant, prof.	Northwestern University, Evanston, USA	Dependence of Fracture Size Effect and Projectile Penetration on Fiber Content of FRC	2019
Ulisse Stefanelli, prof.	University of Vienna, Austria	Existence results for a morphoelastic model	2021
Martin Brokate, prof. Dr.	TU München, Germany	Hysteresis Operators (series of 10 lectures)	2021-2022
Ippei Maruyama, prof.	The University of Tokyo	Irradiated Concrete	2023
Pavel Trtík, Assoc. prof.	Paul Scherrer Institute, Switzerland	Experimental Investigation of nonhomogenity of materials using a bundle of a neutrons	2020
Lorenzo Marchi, Dr.,	IRPI, Padova, Italy	Debris flow	2020
Jan Hensen, prof.	Eindhoven University of Technology, Netherlands	Building Performance Simulation Challenges and Opportunities	2022
John Schwartz, prof.	University of Tennessee in Knoxville, USA	Stream restoration in USA	2021
Peter Fiener, prof.	University Augsburg, Germany	Microplastics in soils	2019

Note: Provide up to 10 examples.

Table 3.2.5 - Involvement in the evaluation of national/European research project/programme calls relevant to the R&D&I area at the unit during the evaluation period

Name, surname and title(s) of the evaluated unit's staff member	Name of the research project/programme call	Name of the contracting authority/guarantor of the project/programme call	Year

Milena Pavlíková, prof. Ing., Ph.D. Tomáš Vogel, prof. Ing., CSc. Michal Dohnal, doc. Ing., Ph.D. Milan Jirásek, prof. Ing., DrSc. Jaroslav Kruis, prof. Ing., Ph.D. Jan Vorel, doc. Ing., Ph.D. Pešková, Zuzana, prof. Ing. arch., Ph.D., prof. Ing. Ph.D.	Evaluation panel members (P104, P105)	Czech Science Foundation (GAČR)	2019-2023
František WALD, prof., Ing., CSc. Pavel Ryjáček, prof. Ing. Ph.D. Michal Jandera, prof. Ing. Ph.D. David Stránský, doc. Ing. Ph.D.	VEGA Commission for Civil Engineering	VEGA, Slovakia	2021, 2023
František WALD, prof., Ing., CSc.	RFCS Steel v6, v9	EU/RFCS	19-24
František WALD, prof., Ing., CSc.	GRF / ECS	Research Grants Council (RGC), Hong Kong	20,22,24
Michal Jandera, prof. Ing. Ph.D.	Marie Skłodowska-Curie Postdoctoral Fellowships (MSCA-PF)	European Commission	2023-4
Václav Matoušek, prof. Dr. Ing.	Vici	Dutch Research Council (Netherlands)	2021
Petr Kabele, prof. Ing. Ph.D.	ERC-2019-STG	European Commission	2019
Karel Kabele, prof. Ing., CSc., FEng.	BUS-GoCircular	EU H2020-LC-SC3-2018-2019-2020 / H2020-LC-SC3- EE-2020-2	2021-2023
Jaroslav Kruis, prof. Ing. Ph.D. Jan Zeman, prof. Ing., Ph.D.	National evaluation of research organizations according to Methodology 17+	Ministry of Education, Youth and Sports	2020-2023
Petr Bílý, doc. Ing., Ph.D.	Théta, Sigma, OPSEC, Delta, Prostředí pro život, TREND, Doprava 2020+	Technology Agency of the Czech Republic	2022-2023

Note: Provide up to 10 examples.

RESEARCH PROJECTS

3.3 Research projects

The evaluated unit shall list at most 10 (considered most significant by the evaluated unit) research projects/activities (regardless of whether they are supported by public funds or based on contract research[22]) that it has implemented or participated in during the period of 2019–2023[23]. This should be done from the full list in annex tables (Table 3.3.1-3.3.2)[24], regarding particularly the results achieved or the application potential of the projects. The unit should also describe how the research projects contributed to the mission and purpose of the evaluated unit. If the evaluated unit has been a participant in listed project, it shall indicate which other entities were involved and describe its contribution to the project. The interdisciplinary aspects of the projects will also be commented on, along with any collaboration with other units of the evaluated HEI.

Maximum 300 words per project.

Self-assessment:

EU H2020 project **Geo-harmonizer**: The EU-wide automated mapping system for the harmonization of Open Data based on FOSS4G and Machine Learning, aimed to reduce problems with national geographic data by using seamless, comprehensive datasets covering the entire EU and harmonizing them using open source software with machine and

[22] For the definition of contract research for the purposes of evaluation in the HE segments, see Article 2.2.1 of the Community Framework for State Aid for Research, Development and Innovation 2014/C 198/01.
[23] Regardless of whether the projects are completed or still ongoing, provided that at least part of the project was implemented during the evaluation period.
[24] The evaluated unit shall only fill tables that are relevant to it.

deep learning methods. The project was funded by the European Commission under the CEF Telecom programme. FCE coordinated the project, working with other European partners (OpenGeoHub (NL), Mundialis (DE), MultiOne (CRO), Terrasigna (RO)). The main objective was to create a fully automated system for importing and harmonizing geodata, especially in the areas of environmental data, land use and climate change. The project solution involved close collaboration with national authorities and NGOs, including existing EU-funded systems such as Copernicus. New datasets covering the territory of EU Member States, such as land use change between 2000 and 2019, temporally aggregated LUCAS (the Land Use / Cover Area frame Survey) data, climate change indicators, environmental quality maps, or predictions of potential natural vegetation, were created and made available within the project. The created datasets are available as open data. In addition, a geoportal (https://ecodatacube.eu/) has been created to allow easy access to the data through an interactive web mapping application. Another output of the project is the ST_LUCAS system, enabling automated import of LUCAS data, harmonization and spatiotemporal aggregation. The project contributed to the mission of the evaluated unit, especially in the area of open science and support for geodata interoperability. The interdisciplinary aspects of the project included a combination of geoinformatics, remote sensing and environmental sciences. As a result, Geo-harmonizer presented the potential for widespread use of harmonized open geodata in public administration, academia and the private sector, contributing to the further development of open geospatial infrastructure in Europe, 2019-2022, total budget 376k EUR.

The European H2020 project **Achieving Wider Uptake of Water-Smart Solutions** (WIDER UPTAKE), coordinated by SINTEF (Norway), with participants including NTNU (Norway), HIAS IKS, HIAS HOW2O AS, STORM AQUA AS, IVAR IKS, GRONN VEKST AS, SIRKULA IKS, TERRAMARINE AS (Netherlands), TU Delft, STICHTING WATERNET, NPSP BV (Netherlands), FCE CTU, VŠCHT, Prazska vodohospodarska spolecnost (CZ),AS; Universita Degli Studi Di Palermo, AMAP SPA (Italy); Council for Scientific and Industrial Research, Sewerage Systems Ghana (Ghana). CTU focused mainly on testing treated wastewater for irrigation of public greenery through pilot units installed at the central wastewater treatment plant. The results of the project fulfill CTU's mission of environmentally sustainable solutions in water management in urbanized areas. The project addressed water reuse across the sectors of civil engineering (new materials), agriculture (irrigation, nutrient recycling), energy (biochar energy recovery) and environment (closing water and substance cycles), 2020-2024, FCE total budget 624k EUR.

Czech Science Foundation project **Non-periodic pattern-forming metamaterials: Modular design and fabrication**. The project aimed to create an integrated framework for computational simulation, optimal design, robot-assisted fabrication, and centimeter-scale self-assembly of modular mechanical metamaterials. These non-periodic architectured materials can be assembled from a limited number of repeating blocks (modules), similar to a jigsaw puzzle, to achieve a desired response. This proposal received funding from the Czech Science Foundation (CSF)'s first EXPRO call, launched by CSF in 2018 to support high-risk, high-gain research ideas in the spirit of European Research Council (ERC) grants. The PERFORM team tackled these challenges by developing efficient computational schemes, modular topology optimization for simultaneous module and assembly design, passive centimeter-scale self-assembly via magneto-mechanical principles, and robotic fabrication pipeline validated on optimized samples. The project also pioneered polynomial optimization techniques in structural design and variational methods. The results appeared in 31 leading peer-reviewed journals. Two Ph.D. theses earned international prizes, the first from FCE, and one thesis was co-supervised with TU/e. Post-project funding includes an ERC.cz grant, two CSF projects, and the five-year ROBOPROX project, integrating top Czech researchers in robotics, informatics, optimization, and materials science. Aligned with FCE's scientific mission in integrating simulation and optimization of materials and structures, modeling of multi-physics processes and robotics and automation, PERFORM led to the creation of the Open Mechanics Group (https://openmechanics.fsv.cvut.cz), as a joint effort between the Department of Mechanics and the Experimental Center, and the lab space located at the Czech Institute of Robotics and Cybernetics (CIIRC). This environment proved particularly beneficial to junior team members, from whom four became Assistant Professors at FCE, one at TU/e, and one at the University of Palermo, 2019-2023, FCE total budget 1,354k EUR.

EU H2020 project **Automated Solutions for Sustainable and Circular Construction and Demolition Waste Management** (RECONMATIC). The transition towards a zero-waste construction industry in Europe implies the entire life-cycle of construction and demolition waste (CDW) management. The project aims to design innovative tools, solutions, and techniques to connect CDW prevention and management with the European waste reduction goals. The project is working on an integrated decision-making approach – one that considers all aspects of CDW generation. As such, it develops, tests and demonstrates automated, digital and robotic solutions for construction industry stakeholders' collaboration and waste traceability. RECONMATIC in the first two years assessed existing practices in CDW management, from the prevention and minimization of waste to its effective reuse throughout the life-cycle and identify markets to support supply chains and circular economies. To allow more efficient and automated sorting of mineral waste, an AI-based CDW classification software utilizing low-cost sensors' inputs was prepared. In this project task the aim is to use appropriate ML models in combination with variant sensor types to identify solutions to achieve the best possible sorting

of the individual material components, which will allow better use of higher value-added recycling solutions, contributing to the mission of FCE in sustainable life-cycle management. At the same time, attributes that describe the waste and recycling-related aspects of materials, components and other 3D geometry captured within digital models (WASTEie) have been developed to enhance the non-graphical information in BIM models. Coordinated by CTU, bringing together 23 partners from 7 countries (5 EU+UK+China, total budget 6,091k EUR, 2022-2026, https://www.reconmatic.eu/about).

EU H2020 project **Engineering barrier 200C**: The aim of the project is to critically evaluate the durability of the bentonite barrier of a nuclear waste repository at higher temperatures through a long-term in-situ experiment and accompanying research. So far, the only safe and technically feasible way is to build a deep repository that will safely separate high-level waste and spent nuclear fuel from the environment for hundreds of thousands of years. The repository system is based on a multi-barrier principle, where the inhibited waste is progressively surrounded by a series of repository casings and a bentonite sealant layer - the so-called engineered barrier. The final barrier is the host environment itself. Safety will be improved through better input to the safety analysis-important insights will be gained into the behavior of both the system and the engineered barrier materials. These insights will be relevant to both current and high-temperature designs. The principal investigator is CTU (FCE) in cooperation with Charles University, Czech Geological Survey and Teramed. The application guarantor of the project is SURAO. The project is multidisciplinary and has seven planned deliverables, including Physical High Temperature Storage Site Model, Operation of an advanced high temperature barrier, Expert study on the mineralogical composition of the bentonite used and its changes during the experiment, Geomicrobiological study of the behaviour of microbial colonisation at high temperatures in a rock environment, Numerical model of the THM behaviour of bentonite, Expert study on the hydro-mechanical properties of used bentonite when exposed to temperatures above 150 °C, Database of material characteristics of bentonite reflecting changes when exposed to temperatures above 150 °C. The project started in 2018 and the in-situ experiment was installed and started in the Josef underground laboratory in autumn 2019 and operated until mid-2024, when it was dismantled, 2018-2025, total budget 945k EUR.

Ministry of Culture project Vltava River - changes in the historical landscape due to floods, dam construction and changes in land use with links to cultural and social activities in the vicinity of the river. The project dealt with changes in the historical landscape around the Vltava River in connection with the construction of the cascade of dams. This topic required the elaboration of thousands of old maps, plans, historical photographs and other archival materials and the creation of a comprehensive information system about the old Vltava River. A 3D digital model of the flooded valley was created along the entire length of the river, including models of important buildings around the river. The results were visualized in the form of a 2D and 3D web mapping application. The project also resulted in a highly appreciated book publication (e.g., CTU Rector's Award). At the end of the project, the results were presented in the form of an exhibition, which allowed to visualize the historical Vltava valley in the areas of the Lipno, Orlík and Slapy dams in the form of large-format physical models (4 by 1 metre), large-format floor prints of the entire historical river course and more than 50 exhibition panels. The application potential of the project lies primarily in the huge amount of processed archival material that can be used by other researchers. In addition to the principal investigator (FCE), the Faculty of Science of Charles University also participated in the project. The resulting informative map portal was awarded the Map of the Year Award of the Czech Cartographic Society in the category of Digital Cartographic Products and Internet Applications. This result is aligned with FCE mission in Geoinformation technologies. CTU's share in the project was approximately 75%, 2018-2022, total budget 704k EUR.

TAČR Epsilon project TH04010329 Autonomous Robotic Construction System. Project coordinated by industrial partner (DEK a.s.) with FCE as a sole partner. The project has developed a working prototype of an autonomous robotic construction system that enables precise and fast construction production with reduced number of construction workers. The solution has been focused on additive manufacturing (load-bearing and non-load-bearing walls), precision mortar masonry (foundations, load-bearing walls and partitions), insulation and surface painting. The autonomous system provides export of the digital building model to the control interface of industrial robots, essentially enabling automated robot planning and production, demonstrating FCE's competence of in digitalization and robotics. The results have been demonstrated on sample objects at realistic 1:1 scale. The winning project of the 2023 TAČR Awards in the Business category, (https://www.youtube.com/watch?v=4XmYAPAaf2M, 2019-2021, FCE total budget 207k EUR.

FCE collaboration with Radioactive Waste Repository Authority (SÚRAO) in the frame of contracted research focused on issues related to the end of the fuel cycle of nuclear fuel and its disposal in a deep repository for radioactive waste. The unique faculty underground workplace, the Josef Underground Laboratory, is used to demonstrate and validate project solutions. These complex tasks are solved in multidisciplinary team, including partners from Faculty of Nuclear Sciences (FJFI), Technical University Liberec (TUL) and commercial subjects. In this activity, basic research questions are addressed, in-situ experimental activities are carried out to support safety verification and support mathematical modelling, but also design activities are carried out. This multidisciplinary work contributes to a construction of a safe and sustainable deep

repository in the Czech Republic and the disposal of the first radionuclides in a deep repository in 2050, aligned with FCE long-term research directions in advanced modeling and life-cycle and environmental management. The total amount of FCE contracted work in period 2019-2023 with SURAO is 1,460k EUR.

FCE contracted research with Road and Motorway Directorate (ŘSD) included Elaboration of Technical Conditions for Pavement design for roads, Design of maintenance and repairs of non-rigid pavements, Paving for road structures and Technical quality conditions for Compacted asphalt layers, Evaluation of immovable property of the Road and Motorway Directorate of the Czech Republic on the basis of price indicators, assessment of the technical solution of cost-important bridge structures in terms of investment intensity and expected operating costs, consultancy services related to use of modified asphalt binders (PMB, CRMB) and recycling of existing ones containing carcinogenic polycyclic aromatic hydrocarbons (PAUs). The total amount of FCE contracted work in period 2019-2023 with ŘSD is 450k EUR.

The FCE maintains a long-established and close collaboration with the Railway Administration of the Czech Republic. Their joint efforts are centered around evaluating existing structures and bridges, relevant regulations, and internal processes, alongside consultation and methodological activities. FCE provides expert services in areas such as new project preparations, the development of expert opinions, and assessments, including identifying the initiation and propagation of structural defects, determining their causes, and offering recommendations for their mitigation. Another significant area is the long-term monitoring of bridges, encompassing both safety monitoring and the evaluation of the interaction between bridges and contactless tracks. The insights gathered from this monitoring are then used to systematically prepare requirements for future high-speed railways in the country. The total amount of FCE contracted work in period 2019-2023 with Railway Administration was 450k EUR.

In Table 3.3.1 we use following shortcuts to indicate provider: Ministry of Education, Youth and Sports (MSM), Ministry of the Interior (MVO), Ministry of Foreign Affairs (MZO), Ministry of Culture (MKO), Czech Science Foundation (GAO), Technology Agency of the Czech Republic (TAO),European Union (EC), European Space Agency (ESA).

Table 3.3.1 Projects supported by public funds

In the role of beneficiary						
Provider[25]	Project name	Support (in thousands CZK/EUR)[26]				
		2019	2020	2021	2022	2023
MSM	The effect of input data quality and computation method on soil loss determination in rural landscape	96/3787				
MSM	Application of municipal sewage sludge ash in production of eco-efficient construction materials	96/3787	96/3787	96/3787		
MSM	Compound rejuvenating effects on aged bitumen from reclaimed asphalt material by bio-waste additives	179/7041	5/178	5/178		
MSM	Using UAVs to assess surface runoff and soil erosion		82/3235	82/3235		
MSM	Salt transport, storage and crystallization in renovation plasters – combined computational and experimental study		60/2367	60/2367	60/2367	
MSM	UHPRFC for application for severe conditions		80/3156	56/2209	80/3156	
MSM	Acceleration of soil erosion from arable land following climate and land management change		84/3314	82/3235		
MSM	The effect of landscape structure and patchiness on soil erosion, sediment transport and retention capacity				74/2903	74/2903

[25] If the provider is from abroad, please indicate the provider's country of origin in brackets. For the determination of the country of origin of the provider, the place of residence of the provider is decisive.

[26] Indicate the total amount expressed in thousands of CZK and the conversion of the total amount into Euro.

MSM	Progressing understanding of landscape hydrology by ecohydrological modeling in Czech and Austrian watercourse catchments					80/3156
MSM	Advancement and standardization of European rain simulation facilities					106/4181
MSM	Synergy of multiscale Modelling and machine Learning: Strategy for biomedical sciences and battle against cancer					63/2465
MSM	Membership of Czech representative in IWA/IAHR Joint Commitee on Urban Drainage	95/3762				
MSM	Ecosystem services of mountain forests in catchments of drinking water reservoirs affected by the acid atmospheric deposition and climate change.	383/15089	316/12475			
MSM	The effects of land use changes on soil erosion, sediment transport, water quality and runoff conditions	845/33333	653/25759			
MSM	Connectivity of sediment transport within intensively-used rural catchments		690/27219	840/33136	1780/ 70217	1736/ 68481
MSM	Development of a special cementitious composite suitable for 3D robotic processing		423/16682	713/28126	770/30375	
MSM	The stain limit for advanced modelling of steel structures – deterministic and probabilistic approach					703/27747
MSM	The Effect of Chemical Composition of Concrete on Its Long-term Performance in Extreme Environment	1220/ 48126	944/37239			
MSM	Splash erosion - the initial stage of erosion processes		158/6233			
MSM	Splash erosion - the initial stage of erosion processes			158/6233		
MSM	Land degradation through soil erosion - from mean to extreme				171/6726	
MSM	Soil erosion - threat for our future					238/9369
MVO	Development and research of validated fire and occupant evacuation models and their practical application in building fire safety assessment	3870/1526 63				
MVO	Research, development, testing and performance assessment of critical infrastructure parts	550/21696	550/21696			
MVO	Resistance Improvement of Dams and Reservoirs as Key Elements of Water Infrastructure	939/37041	1643/ 64813	1499/ 59132	387/15266	
MZO	Antecedent saturation and design rainfalls as factors of hydrological response in small catchments	3210/ 126627	3520/ 138856	3516/ 138698	3370/ 132939	
MKO	Interior thermal insulation systems for the architectural-heritage domain	3870/ 152663	2610/ 102959			
MKO	Conservation, reparations and monitoring of historical pond dams as our cultural heritage	2608/ 102880	2535/ 100000			
MKO	Evaluation of stability and technical conditions of the Broumov group of churches and proposal of remediation of this unique Europe culture heritage	1567/ 61815	1630/ 64300			
MKO	Documentation, registration, presentation and proposals of smokestacks conversions as an endangered group of heritage of industrial monuments in the Czech Republic	2140/ 84418	1713/ 67574			
MKO	Research and development of materials, processes and techniques for restoration, preservation and strengthening of historic masonry structures, surfaces and systems for preventive care of heritage buildings exposed to anthropogenic and natural risks	4928/ 194406	4595/ 181270			
MKO	Analysis and presentation of the values of modern architecture of the 1960s and 1970s as part of the national and cultural identity of the Czech Republic.	963/37988	973/38383			
MKO	Czech Historical Atlas	1848/ 72899	1848/ 72899			
MKO	Methods for ensuring the sustainability of steel bridge structures of industrial cultural heritage	2454/ 96821	2114/ 83402	2057/ 81152	3596/ 141854	
MKO	Documentation and presentation of technical cultural heritage on the Elbe-Vltava Waterway	2533/ 99921	2212/ 87258	2283/ 90059	2313/ 91243	
MKO	Sustainable management of cultural heritage buildings	2639/ 104103	2649/ 104497	2639/ 104103	4852/ 191400	
MKO	Traditional urban construction and building crafts at the turn of the 19th and 20th centuries	3104/ 122446	3351/ 132189	3635/ 143393	4128/ 162840	
MKO	Development of a progressive rehabilitation procedure for the restoration and conservation of military fortress buildings from the 1930s.	2739/ 108047	2768/ 109191	2686/ 105957	2720/ 107298	
MKO	Vltava River - changes in the historical landscape due to floods, dam construction and changes in land use with links to cultural and social activities in the vicinity of the river	3585/ 141420	4239/ 167219	3255/ 128402	3562/ 140513	

MKO	Tools for the preservation of historical values and functions of arch and vaulted bridges		2883/ 113728	3402/ 134201	3126/ 123314	
MKO	Building stone surface topography and its application in the field of stone features restoration		1492/ 58856	1909/ 75306	1779/ 70178	
MKO	Historical cultural landscape in danger and vision of its development in the context of current landscape changes					1634/ 64458
MKO	Restoration of hard-plaster facades from the first half of 20th century					4177/ 164773
MKO	Two centuries of railways in the Czech lands. Cultural, socio-economic and transport technical aspects of the development of Czech (Czechoslovak) railways					1272/ 50178
MKO	Vltava II – transformations of historical landscape, the river as a connection and a barrier					1079/ 42564
MKO	Active preservation of the immovable industrial heritage by new reuse					2959/ 116726
MKO	Architectural and festive lighting in the context of historic buildings and spaces					2323/ 91637
MKO	Boundaries as a cultural-historical phenomenon. Analysis, specification, comparation and interpretation					2361/ 93136
MKO	Historical Architectural Member Design and Proportioning Procedures – reconstruction and application					622/24536
OTH	MOVPD - Determination of technology and methodology for rapid runway/RWY repairs after attack by anti-surface conventional tactical munitions, including assessment of available assets and materials					3314/ 130730
GAO	Modelling and experimental verification of the effect of freeze-thaw cycles on the degradation of porous building materials	1418/ 55937				
GAO	Thermal insulation composites containing waste plastic fillers	1080/ 42604				
GAO	Cement composite for radionuclide encasement	2224/ 87732				
GAO	Performance of concrete subjected to blast and subsequent fire loading	1283/ 50611				
GAO	Kinetic energy of rainfall as driving force of soil detachment and transport	2121/ 83669				
GAO	Research into possibilities of utilizing micronized recycled concrete to be used as filler with binding capacity	1118/ 44103				
GAO	Analysis of the relations between the microstructure and macroscopic properties of ultra-high performance concretes	1408/ 55542				
GAO	Nonlinear stability and strength of slender structures with nonlinear properties.	928/36607				
GAO	Quantification of hydrological variables from microwave propagation in cellular networks in atmospheric boundary layer	2154/ 84970				
GAO	Analysis of the impact of explosions in enclosed and semi-enclosed spaces	991/39093				
GAO	Reliable two-scale Fourier/finite element-based simulations: Error-control, model reduction, and stochastics	2408/ 94990				
GAO	Small-scale fracturing of amorphous and crystalline materials assessed with nanoindentation and FIB	2427/ 95740				
GAO	Water flow and solute transport in structured soils	1598/ 63037				
GAO	Interior plasters with enhanced moisture accumulation capabilit	1227/ 48402	1275/ 50296			
GAO	Properties, durability and performance of lightweight mortars with mineral admixtures	2086/ 82288	2086/ 82288			
GAO	Comprehensive study on physicochemical interaction and related phenomena between bitumen and mineral aggregate by advanced experimental methods	1621/ 63945	1544/ 60907			
GAO	Probabilistic material identification of transport parameters based on non-invasive experimental measurements	1920/ 75740	1920/ 75740			
GAO	Fire resistance of glued laminated timber beams including uncertainties	1471/ 58028	1471/ 58028			
GAO	Mechanical characteristics of polymer adhesive joints in civil engineering applications	823/32465	764/30118			
GAO	Multilevel modelling of mechanical properties of heterogeneous materials and structures on PC clusters	795/31361	795/31361			
GAO	Unfired and rammed clay for construction	1061/ 41854	1051/ 41460			

GAO	Bacterial induced calcification for self-healing of cementitious composites	1586/ 62564	1548/ 61065			
GAO	The effects of methylxanthine-based biocides on the properties of constructional timber	1351/ 53294	1391/ 54872	1486/ 58619		
GAO	Effect of Biofilms on Hygrothermal Performance of Building Facades Materials	1020/ 40237	995/39250	1011/ 39882		
GAO	Influence of fillers on the structure and properties of calcium sulphate composites	975/38462	987/38935	1000/ 39448		
GAO	High performance concrete with enhanced self-healing capability	1032/ 40710	1013/ 39961	988/38974		
GAO	Non-periodic pattern-forming metamaterials: Modular design and fabrication	6505/ 256607	7405/ 292110	7765/ 306312	10989/ 433491	7860/ 310059
GAO	Concrete slurry - hazardous waste or secondary raw material?	1598/ 63037	1623/ 64024	1635/ 64497		
GAO	Design and advanced modelling of forced-entry and bullet resistant glass structures	1938/ 76450	1880/ 74162	1824/ 71953		
GAO	Compression tests with confinement for analysis of concrete columns	1385/ 54635	1310/ 51677	1297/ 51164		
GAO	Time dependent behavior of thermoset polymers with application to anchor	1681/ 66312	1679/ 66233	1677/ 66154		
GAO	Shrinkage-induced deformations and microcracking in structural concrete - monitoring, modeling and identification	1362/ 53728	1302/ 51361	1290/ 50888		
GAO	Modelling of intense collisional sediment transport with turbulent suspension	2125/ 83826	2100/ 82840	2075/ 81854		
GAO	Performance of structures with timber fire protection – multi-physics modelling	1536/ 60592	1794/ 70769	1783/ 70335		
GAO	Characterization of composite materials based on surface-modified rapeseed straw and environmentally-friendly adhesives		1347/ 53136	1415/ 55819	1377/ 54320	
GAO	Application of fuzzy control theory in thermal design of residential buildings		1278/ 50414	1233/ 48639	1158/ 45680	
GAO	Hydration stoppage techniques for cement, lime and gypsum		1130/ 44576	1117/ 44063	1123/ 44300	
GAO	Controlled modification of mineralogical composition of ceramic body for improvement of its utility properties		1323/ 52189	1371/ 54083	2788/ 109980	
GAO	Analysis of influence of electromagnetic field on behaviour of fibre reinforcement in cementitious composite		832/32821	928/36607	1364/ 53807	
GAO	Underrepresented processes affecting the water balance of forest catchments in headwater areas of temperate zone		1236/ 48757	1260/ 49704	2468/ 97357	
GAO	Physical and chemical processes in low-cement heat-resistant		1986/ 78343	1911/ 75385	1886/ 74398	
GAO	Fungal growth on the surface layer of wood-based materials under dynamic boundary conditions		1021/ 40284	1034/ 40789	2647/ 104418	
GAO	Spatial rainfall estimates using improved observations from commercial microwave links and statistical data fusion		1606/ 63361	1699/ 67030	1920/ 75740	
GAO	Process modeling for 3D printing and other additive technologies		1544/ 60907	1656/ 65325	1292/ 50966	
GAO	Upgrade in Design of Energy Dissipators for Spillways		945/37278	945/37278	945/37278	
GAO	Hysteresis modeling in mathematical engineering		1483/ 58501	1471/ 58028	2026/ 79921	
GAO	Global analysis methods for slender structures of stainless steels and other steels with non-linear stress-strain diagram		1264/ 49862	1511/ 59606	862/34004	
GAO	Characterization of modified isocyanate-based adhesives for engineered wood products			945/37278	1963/ 77436	1914/ 75503
GAO	Chemical and physical interactions of basalt-based reinforcement with cementitious matrix			1197/ 47219	1269/ 50059	1215/ 47929
GAO	Experimental and computational analysis of transport, accumulation and crystallization of salts in non-hydrophobic plaster mortars			1206/ 47574	2354/ 92860	2366/ 93333
GAO	Thermo-hygro-mechanical model of concrete pavements			1126/ 44418	1837/ 72465	1795/ 70809
GAO	Lattice discrete particle model for thermoset polymers used in rebar connections and heavy-duty anchoring			1930/ 76134	1930/ 76134	1930/ 76134
GAO	Charring of timber under fully developed natural fire – stochastic modeling			1067/ 42091	1408/ 55542	1231/ 48560
GAO	Microstructural investigation and simulation of coupled physical fields in concrete due to electromigration treatments			1358/ 53570	3252/ 128284	3242/ 127890
GAO	Polynomial optimization in the design of globally optimal frame structures under dynamic loads				2936/ 115819	4221/ 166509

GAO	Utilization of water sediments for building materials design				2000/ 78895	2108/ 83156
GAO	Mass transfer in porous construction materials suitable for application in nuclear waste repositories				1418/ 55937	1454/ 57357
GAO	Functional characteristics and environmental impact of lime plasters with natural additives for historical building renovation				1444/ 56963	1462/ 57673
GAO	Microbiologically induced calcite precipitation for production of carbon-negative building materials from recycled concrete				2362/ 93176	2627/ 103629
GAO	Performance of steel-concrete composite structures subjected to blast loading				1837/ 72465	1933/ 76252
GAO	SUMO: Sustainable design empowered by materials modelling, semantic interoperability and multi-criteria optimization.				2497/ 98501	2556/ 100828
GAO	Advanced approaches for determination and understanding of asphalt mix fatigue behavior				1717/ 67732	1742/ 68718
GAO	Data-driven calibration and validation of critical state constitutive models for soils and associated uncertainties				2590/ 102170	2590/ 102170
GAO	Multifunctional cementless composites with low environmental impact for special construction applications				1014/ 40000	894/35266
GAO	Experimental study and advanced modelling of multilayer glass panels exposed to explosive blasts and ballistic impact				2040/ 80473	2290/ 90335
GAO	Possibilities of using natural fibers for the production of hybrid textile reinforcement in concrete				2360/ 93097	3042/ 120000
GAO	Alternatives of thermally activated lower grade clays as a partial cement replacement				661/26075	882/34793
GAO	Hydrological performance of multi-layered constructed soils				2344/ 92465	2403/ 94793
GAO	Nanomechanical performance of cementitious composites under radiation impact and variable environmental actions					2870/ 113215
GAO	Structure and dynamics of multi-species bed load transport above erodible plane bed in open channel					1708/ 67377
GAO	Physical and chemical processes in alkali activated ceramics exposed to high temperatures					1440/ 56805
GAO	Smart and programmable housing and living – energy storage systems are hidden everywhere in our buildings within basic construction components					2755/ 108679
GAO	Research of heavy metals immobilization in alternative low-carbon composites					2558/ 100907
GAO	Impact of C3A on the early strength of cement					1246/ 49152
GAO	Prediction of mechanical behaviour of structures 3D printed based on alloy of titaninum with betastructure					2950/ 116371
GAO	Directed electromagnetic orientation of dispersed fibre reinforcement for optimal stress resistance in concrete structural members					2013/ 79408
GAO	Surface treatment of glass and its influence on the reliability of adhesive bonding for glass structures at elevated temperatures					2539/ 100158
GAO	Ductility and strength demands for connecting plates and bolts in bearing type connections of normal and high-strength steels					789/31124
TAO	Finishing cycle structures for a multi-purpose demountable precast material- and energy-efficient building system	1770/ 69822	1770/ 69822			
TAO	Subtle Concrete Furniture and Small Structures for the Railways Stations	2630/ 103763				
TAO	Optimization of 3D-printed trabecular structures for use in implant dentistry and their mechanical analyses	1280/ 50493				
TAO	Atlas HYDROLOGY - a modern tool for sediment and runoff calculating and anti-erosion measures dimensioning	1700/ 67061				
TAO	Advanced procedures of steel and composite structure connections design and production	1632/ 64390				
TAO	Advanced design of joints with steel elements in timber structures	1092/ 43093				
TAO	Engineering barrier 200C	7191/ 283657	3432/ 135367	3437/ 135580	3453/ 136219	3518/ 138775
TAO	Progressive design of bridge structures for transport infrastructure with regard to modern construction methods	3684/ 145325	3017/ 119014	2979/ 117515		
TAO	Home Town UNESCO: Material and Immaterial Public Space of Towns of Special Heritage Protection, Pilot Project - Town of Telc	3072/ 121172	2669/ 105273	3001/ 118368		
TAO	Plasterboard with increased resistance to biological degradation	1007/ 39707	1189/ 46922			
TAO	Physical and hydropedological soil properties of the Czech Republic	1388/	2282/	1528/		

		54753	90004	60276		
TAO	Influence of small water reservoirs on the groundwater level and hydrological balance with emphasis on dry periods	683/26941	2884/ 113769	1948/ 76844	775/30568	538/21224
TAO	Method of determining the value of non-residential buildings in the government sector.		1199/ 47278			
TAO	Use of higher amounts of reclaimed material in asphalt mixtures with PmB bitumen		788/31065	788/31065	2353/ 92824	2447/ 96524
TAO	Land administration in time and space		902/35582	1388/ 54753	3095/ 122091	
TAO	Utility and risk of irrigation over the Czech Republic in changing climate		495/19539	678/26754	2242/ 88427	2574/ 101530
TAO	Using remote sensing to assess negative impacts of rainstorms		469/18510	810/31960	2281/ 89995	2295/ 90514
TAO	Development of chemical admixtures for concrete incorporating energy by-products		1411/ 55641	2194/ 86564	873/34445	
TAO	Development of Coupling Details for Concrete Containers for Radwaste and Spent Fuel and Modeling of Their Long-Term Performance		948/37396	1822/ 71874	1031/ 40688	
TAO	Mobile recycling line for processing construction waste from mineral thermal insulation materials and use of recycled material including possibility of direct application on construction		704/27771	1449/ 57164	2088/ 82359	
TAO	Long-term monitoring of track construction at tram crossings focusing on shallow crossings in order to optimize their maintenance and reduce noise		619/24423	1303/ 51410	999/39413	
TAO	Design of advanced stainless steel structures		766/30229	1105/ 43602	344/13590	
TAO	Shape optimization of the hydraulic structures using parametric models of structures and CFD		495/19518	1189/ 46886	785/30978	
TAO	Advanced methodology for static modelling of scaffolds made of prefabricated components		364/14376	513/20234	245/9655	
TAO	Development of efficient tools to minimize production of construction and demolition waste, its monitoring and reuse			1325/ 52249	4835/ 190720	3633/ 143331
TAO	Partial improvement of navigation conditions on the regulated Elbe between Ústí nad Labem and the state border of the Czech Republic / Germany			1059/ 41760	1065/ 42006	
TAO	Adaptation of the French method of evaluation of track substructure for high-speed lines into the Czech Republic conditions			1600/ 63116	2410/ 95069	2410/ 95069
TAO	Increased reliability and tunnel lining lifetime by using information models and new approaches			1803/ 71116	1883/ 74272	1883/ 74272
TAO	Deep-Learning-Enabled On-Demand Design of Composite Microstructure: Application to Mechanical Metamaterials			1597/ 62983	5223/ 206034	3802/ 149987
TAO	The enhancement of the fatigue strength of the high strength steel welded details for new and temporary bridges and their renovation				2168/ 85523	3400/ 134122
TAO	Materials for circular economy - industrial waste based geopolymers composites with hybrid reinforcement				1759/ 69385	2950/ 116364
TAO	Effective design control of stormwater management systems in urban areas				985/38854	1071/ 42249
TAO	Intelligent acquisition methods and analysis of digital data for bridge inspections				8748/ 345091	
TAO	Substances depleting the ozone layer and fluorinated greenhouse gases in the construction sector of the Czech Republic.					535/21089
TAO	Research and development of innovative methods and materials for fire safety design of tunnel structures					2799/ 110422
TAO	Centre for Effective and Sustainable Transport Infrastructure (CESTI)	19767/ 779775				
EC	Concepts of the Building faculty of CTU for Prague 2017	10593/ 417883	9542/ 376417			
EC	Innovation of the existing doctoral programme in Architecture and Civil Engineering and creation of new architectural programmes	1866/ 73604	982/38737			
EC	Development of a research-oriented study programme in Physical and Materials Engineering	691/27263	164/6486			
EC	Support for the accreditation of the research-oriented study programme Civil Engineering	1385/ 54634	367/14479			
EC	Development of research-oriented study programmes in the field of water and environmental engineering	675/26608	319/12601			
EC	Risk management and safety of complex technological objects	2046/ 80711	1215/ 47939			
EC	Smart equipment for the Postgraduate Student Incubator	1067/ 42103	39039/ 1540004			

EC	Establishment of infrastructure for an innovative doctoral programme in Physical and Materials Engineering	1657/ 65353	179/7058			
EC	Provision of research infrastructure for the needs of the newly accredited modified Geodesy and Cartography programme	3773/ 148829	768/30310			
EC	Provision of research infrastructure for the needs of the newly accredited modified programme Construction and Transportation Engineering	7627/ 300848	873/34432			
EC	Innovated Laboratory and Testing Infrastructure for the Doctoral Programme in Civil Engineering	7324/ 288912	910777/ 35928079	1450/ 57192		
EC	Upgrading and complementing the infrastructures of research-oriented programmes in the field of water management and environmental engineering	13494/ 532324	6394/ 252225	11082/ 437151		
EC	Renovation of the laboratory infrastructure of the CTU Faculty of Civil Engineering	35295/ 1392288	2367/ 93355	1475/ 58185		
EC	Renewal and optimisation of the location of remote sensing infrastructure	1594/ 62865	314/12384	2/91		
EC	Strengthening of existing masonry buildings		2513/ 99132			1202/ 47416
EC	AUTOMATED SOLUTIONS FOR SUSTAINABLE AND CIRCULAR CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT				72801/ 2871834	
EC	Geo-harmonizer: EU-wide automated mapping system for harmonization of Open Data based on FOSS4G and Machine Learning	13223/ 521617		5023/ 198146		16905/ 666864
EC	Advanced structures design - fire safety guideline for V4	336/13254				
EC	Opportunistic Precipitation Sensing Network				2640/ 104142	1811/ 71440
OTH	Cooperating towards Advanced MAnagement ROutines for land use impacts on the water regime in the Danube river basin, CAMARO-D	1449/ 57160	1007/ 39724			
OTH	Sasko-Český management povodňových rizik II	720/28402	2334/ 92071			
OTH	Strengthening professional capacities in the field of hydropower 2021			1239/ 48873		
Total		254427/ 10036564	1105401/ 43605553	132969/ 5245338	231927/ 9148979	149137/ 5883124

In the role of another participant

Provider[27]	Project name	Support (in thousands CZK/EUR)				
		2019	2020	2021	2022	2023
MSM	Mathematical Frontiers in Large Strain Continuum Mechanics	12/473	12/473	11/450		
MSM	Hysteresis in hypo-plastic models			3/119	95/3747	
MSM	Research Infrastructure for Geothermal Energy	202/7968				
MSM	Fire effects on soils		741/29231	955/37673	923/36410	341/13452
MPO	Application of brick microparticles at the building	1633/ 64418	842/33215			
MPO	Intelligent composite anchor	1120/ 44181				
MPO	Research and development of mobile protective and ballistic barrier made up of composite board and water infill	1066/ 42036				
MPO	Database of Digital Material Microstructures for Additive Manufacturing	1500/ 59172	1140/ 44970			
MPO	Lightweight masonry materials based on micro-milled mineral by-products with controlled utility properties	1090/ 42998				
MPO	Application of high-value cement composites for the reconstruction of concrete buildings	1500/ 59172	750/29586	600/23669		
MPO	Recycled eco-bricks based on mineral materials and admixtures from by-products	1875/ 73964				

[27] Ibid.

MPO	Development of a passporting and monitoring system for geotechnical risk management	1775/ 70020	1730/ 68245	1160/ 45759		
MPO	Possibilities of utilization of coal-ash from power stations stored at stock piles	1445/ 57002	1445/ 57002			
MPO	The application of the magnetoelastic method for increasing the reliability and durability of existing and newly built prestressed concrete structures.	554/21854	554/21854			
MPO	Plasterboard recycling towards production of materials with added value	1313/ 51795	862/34021			
MPO	Utilization of recycled tires for the production of acoustic insulating elements	720/28387	1330/ 52481	1320/ 52087	1310/ 51692	
MPO	Innovation of the production technology of lightened brick body for thin-walled brick blocks	817/ 32229	1502/ 59250	1502/ 59250	1482/ 58462	
MPO	Expansion of Management System Product "Intelligent House"	1950/ 76923	2050/ 80868	2020/ 79684	2000/ 78895	
MPO	Control and optimization of selected wastewater treatment units based on inline rheological properties of batch measurement focused on the development of innovated thickening and dewatering equipment	305/12032	610/24063	610/24063	610/24063	
MPO	Knowledge transfer in the field of dental implants	408/16098	1059/ 41793			
MPO	Analysis and optimization of technology for automatic collection of road communication 3D data with extremely high global height accuracy together with securing the strictest security standards for the road transport	645/25425	568/22399			
MVO	The advanced technology of rapid determination of bridges deformation by radar interferometry and its use in diagnostics	505/19908	1020/ 40251	1075/ 42420	1009/ 39786	
MVO	Protection of soft targets in the Czech security environment	228/8995	429/16905	440/17339	401/15820	
MVO	Innovation and development tools in the field of cause of fire investigation		2006/ 79138	2006/ 79138	1874/ 73930	1847/ 72846
MVO	Autonomous vehicle for conducting pyrotechnic exploring in extremely dangerous areas				7142/ 281742	7142/ 281742
MZO	Development of automated tools for optimizing monitoring erosion of agricultural land using remote sensing methods	875/34517				
MZO	Creation of a national database of parameters of the mathematical simulation model Erosion 3D and its standardization for routine use in the Czech Republic	848/33452	848/33452	809/31913		
MZO	Ways of soil erosion protection on the farm level after glyphosate ban	985/38856	1080/ 42604	1083/ 42722		
MZO	Use of new soil protection technologies in agricultural practice				1235/ 48718	1235/ 48718
MZO	Assessment of the share of sediments in the eutrophication of reservoirs and the possibility of corrective measures				995/39250	1005/ 39645
MKO	A Transformation of Rural Architecture with Emphasis on the Development of the 19th and 20th Centuries	734/28955	561/22130			
MKO	Identification and presentation of heritage potential of historic cultural landscapes in the Czech Republic	941/37120	945/37278			
MKO	Water towers - identification, documentation, presentation, new use	1656/ 65325	1861/ 73412	2358/ 93018	1477/ 58264	
MKO	VISKALIA – Virtual open air museum of the vernacular architecture		1064/ 41972	1177/ 46430	1166/ 45996	
MKO	Practical approaches to territorial conservation of historical cultural landscape		1045/ 41223	1222/ 48205	1167/ 46036	
GAO	Research and development of high performance composites containing biomass ash	874/34477				
GAO	Function Spaces and Approximation	461/18185	255/10059			
GAO	Monastic settlement as a socio-economic phenomenon in early Islamic Northern Mesopotamia	563/22209	504/19882			
GAO	Reactive magnesia cements-based composites with selected admixtures and additives	13245/ 522485	1276/ 50335	1276/ 50335		
GAO	Geopolymers for smart applications in civil engineering	1011/ 39882	1036/ 40868	998/39369		
GAO	Alkali activated aluminosilicate composites based on ceramic precursors	1216/ 47968	1216/ 47968	1216/ 47968		
GAO	Efficient computational methods for limit analysis and plastic collapse in geotechnical applications	494/19487	506/19961	518/20434		

GAO	Experimental and computational analysis of salt transport, accumulation, and crystallization in non-hydrophobized rendering mortars		996/39290	996/39290	996/39290	
GAO	Heat transfer in the surface boundary layers of building envelopes and its effect on the energy performance of buildings				1108/ 43708	1094/ 43156
GAO	Inactivation of mould growth on surfaces of building materials using low temperature atmospheric plasma				1218/ 48047	1290/ 50888
GAO	Advanced lithium silicate sealers: on the way to sustainable building materials				736/29034	680/26824
GAO	Thermoelectric properties and energy harvesting ability of electrically enhanced alkali-activated aluminosilicates				665/26233	862/34004
GAO	Effect of surface treatments on the performance of silicon-based secondary materials in cementitious composites					1229/ 48481
TAO	Development and industrial optimisation of manufacturing process of construction materials from coal ash for transport construction	1708/ 67363				
TAO	Integrated bentonite sealing for prevention of negative effect of hydrogelogical wells on underground water	870/34320	346/13649			
TAO	Hierarchical additive fabrication of composite components with functionally oriented filling	1467/ 57857				
TAO	Design of technical measures for slopes stabilization and soil erosion prevention	1892/ 74635	1892/ 74635			
TAO	Advanced design of strengthening of steel structures under loading	1008/ 39763				
TAO	Modular external fixation apparatus for electronic distraction and continuous biomechanical stimulation accelerating the new bone tissue formation	870/34320	902/35582			
TAO	Response of reinforced and prestressed concrete structures of WWER 1000 units to extreme dynamic actions for selected scenarios of severe accidents	1000/ 39448				
TAO	Strengthening competitiveness by increasing features of prefabricated components made of Ultra-High Performance Concrete	812/32032				
TAO	Significant economic and material savings in the construction of underground line structures due to incorporating fly ash and secondary waste into the concrete tunnel lining	1176/ 46391	1116/ 44024			
TAO	Airfield concrete panel	1616/ 63748	236/9310			
TAO	Application of image analysis for geotechnical purposes	1468/ 57898				
TAO	CeSTaR - Computer simulation and experimental validation - complex service for flexible and efficient design of pre-cast concrete columns with innovative multi-spiral reinforcement	1500/ 59172				
TAO	ConSlag - research and verification of construction applications with increased added value in case of steel slag	526/20753				
TAO	Industrial research facilities for the treatment of Morbus Peyronie	1428/ 56331	1543/ 60868	1428/ 56331		
TAO	Extending service life of concrete road pavements using mineral admixtures and blended cements	1350/ 53254	1400/ 55227			
TAO	Research and development of 3D printers for use in construction industry	287/11334	673/26542			
TAO	Hidden Connection of Laminated Glass Panes	295/11645	289/11408			
TAO	Numerical modelling and laboratory characterization of bentonite barrier in nuclear waste repositories in the Czech Republic	895/35318	895/35318	889/35066	392/15465	
TAO	Technology for the permanent disposal of non-solid radioactive waste	980/38650	2939/ 115950	2939/ 115950	2939/ 115950	2939/ 115950
TAO	Autonomous Robotic Building System	1723/ 67962	1759/ 69382	1759/ 69382		
TAO	Nano insulating materials for automotive, aviation and aeronautics.	960/37870	960/37870	960/37870	960/37870	
TAO	Waste clay composite as a substitute for tamponage mixtures for low-potential heat pumps	883/34832	947/37357	1170/ 46154	588/23195	
TAO	Research and development of a high-load bearing deformation block and its production process in order to increase the traffic safety	1539/ 60715	770/30357	1539/ 60715		
TAO	3D PRINTER FOR BUILDINGS AND PREFABRICATED COMPONENTS FOR CONSTRUCTION 4.0	1131/ 44615	1065/ 42012	840/33136		
TAO	Innovative technology for the use of inorganic industrial waste materials or by-products	1020/ 40237	1020/ 40237	924/36450	876/34556	
TAO	System for permanent monitoring of material degradation in civil structures	1538/ 60667	1538/ 60667	1538/ 60667		

TAO	Silent tunnels	2028/ 80000	810/31953	513/20237		
TAO	Innovative design of compact Kaplan micro-turbine	475/18737	475/18737	453/17869		
TAO	Recreational purposes of Vltava river cascade and its economical potential under the climate change	357/14070	395/15595	385/15169	346/13644	
TAO	Development of Tools and methods improving Estimation of annual EvaporatioN balance	296/11657	512/20197	207/8166		
TAO	Energy Efficiency of Buildings and Housing Affordability Regarding Its Economics and nZEB Implementation	480/18932	720/28391	414/16316	96/3787	
TAO	Advanced and innovative processing technologies for strategic utilization and storing of coal combustion products (CCPs)		3549/ 139995	3549/ 139995	3549/ 139995	3564/ 140594
TAO	Microstructural modifications of self-compacting concrete to reduce formwork pressures		1904/ 75089	1904/ 75089	1904/ 75089	1904/ 75089
TAO	Development of fibre optic measurement instruments for underground constructions and retaining structures		1914/ 75483	2284/ 90079	2351/ 92742	2351/ 92742
TAO	Reducing material demands and enhancing structural capacity of multi-spiral reinforced concrete columns - advanced simulation and experimental validation		2500/ 98619	2500/ 98619	2500/ 98619	
TAO	Advanced design of structural joints/members by machine learning		1845/ 72781	1845/ 72781	1845/ 72781	1845/ 72781
TAO	Floor coverings on geopolymer basis		1007/ 39719	1283/ 50592	1215/ 47929	
TAO	Non-hazardous surfaces originated from recycled rubber granulate		1388/ 54734	1581/ 62377	1581/ 62377	258/10158
TAO	Machine Learning Approach Using Cloud Computing and Water Quality Prediction to Reduce Emmisions to the Water Ecosystems		657/25931	979/38613	958/37804	
TAO	Water research center		518/20414	1408/ 55554	3350/ 132160	2855/ 112633
TAO	Modelling the significance of pollution sources by phosphorus and proposals for effective measures to meet the objectives of the Nutrient Reduction Strategy for the Elbe River Basin			1100/ 43393	1200/ 47337	1200/ 47337
TAO	Criterial method for evaluating the noise emission of expansion joints after installation			1438/ 56706	1463/ 57692	1438/ 56706
TAO	Optimization of bridge construction and durability, using new composite solution for UHPC and conventional concrete, mineralized admixtures and secondary materials			2150/ 84813	2230/ 87968	2230/ 87968
TAO	Recycling and transformation of construction plasterboard waste into new products for construction and value-added applications			1575/ 62130	1721/ 67899	1609/ 63462
TAO	Development and research of advanced materials for the protection and repair of concrete structures			671/26460	676/26682	693/27348
TAO	Measures for reducing microbial contamination of the indoor environments of low-energy and passive residential buildings and extending their durability			821/32396	1266/ 49926	1254/ 49482
TAO	New generation sandwich constructions for increasing the safety of critical infrastructure objects			2697/ 106402	2697/ 106402	2697/ 106402
TAO	Drywalls with high resistance to mechanical damage			1518/ 59893	1613/ 63621	1575/ 62130
TAO	Development of sound-absorbing concrete for interior applications			1425/ 56213	1414/ 55779	1420/ 56016
TAO	Integration of the monitoring system into protective barriers BALBAR and increase of their resistance			1778/ 70118	1727/ 68121	
TAO	KIDDON - A therapeutic combined disability children's wheelchair for 24/7 use in wide spectra of activities			2545/ 100385	2545/ 100385	2545/ 100385
TAO	Diagnostics and quality evaluation of railway substructure with the help of georadar			143/5632	796/31396	650/25636
TAO	Extension of the HiStruct platform by optimisation of global stability and analysis of design combinations				675/26627	675/26627
TAO	Development of pavement construction layers with optimized gradation to replace deficient aggregate fractions				670/26430	670/26430
TAO	Use of mathematical methods for optimization of computational procedures for determining the capacity of spiral roundabouts				322/12702	368/14517
TAO	Analysis of changes in the water regime of land and watercourses in the territory of the Krkonoše National Park caused by the network of land roads				95/3743	258/10183
TAO	Implementation of a new technology of monolithic tunnel lining with TBM in civil engineering				2408/ 94970	2533/ 99901

TAO	Implementation of new methodological procedures in soil protection against erosion				450/17751	450/17751
TAO	Updating concept of the tolerable soil loss from arable land				855/33728	855/33728
TAO	System for defect and collapse state mitigation for line structures based on fiber-optic sensors					2173/85729
TAO	Identification and monitoring of progressive corrosion and non-corrosion deterioration of steel bridges using IoT platform					4654/183606
TAO	New generation carbon lamellas with enhanced fire resistance to reinforce existing structures					1995/78714
TAO	Development of composite dowel bars combining a basalt core and polymer outer layer along with design guidelines of their applications in concrete pavements					2237/88228
TAO	Optimization of variable speed PAT					2583/101874
TAO	Universal transport packaging with safety structures for the transport of radioactive waste, including non-solid ones					1773/69946
TAO	Virtual prototyping for green concrete structural design–new multi-spiral reinforced concrete column and steel beam structures					185/7283
TAO	Digital twin of Temelín NPP containment for aging management within LTO					1020/40237
TAO	The use of solid alternative fuels to reduce the burden on the environment in the production of heat and electricity in traditional sources					2751/108510
TAO	Research and development of a pontoon hydraulic modular system and a universal electric drive system for a pontoon system					960/37862
TAO	Adaptation of urban areas to flash floods and droughts					832/32809
TAO	Residents Owned Heat Cooperatives To Push Urban Decarbonisation					185/7283
TAO	Smart Regions - Buildings and Settlements Information Modelling, Technology and Infrastructure for Sustainable Development	4721/186233				
EC	Ultralight load-bearing structure of the wheelchair for severely disabled children	348/13745	485/19129			
EC	New generation vibrating tables	530/20907	161/6366		1156/45609	
EC	Research and development of new effective structural systems for ensuring stability of earth bodies		191/7532	582/22970	340/13395	334/13171
EC	Ground Radar Interferometry for ensuring the critical energy infrastructure of the Czech Republic			610/24071	993/39179	1614/63683
EC	Composite materials for the production of tempered paving elements with NOx degradation capability				918/36216	543/21408
EC	Development and optimization of a robust navigation system for automated differential road milling using low-cost GNSS equipment				348/13745	762/30040
EC	Research and development of UHPC application for main structural elements of civil engineering structures in traffic				398/15701	5117/201851
EC	Development of complete software for design optimization and assessment of roof and ceiling structures.					1237/48783
EC	Development and Demonstration of monitoring strategies and technologies for geological disposal		677/26706			
EC	Cement-based materials, properties, evolution, barrier functions	431/17002	2136/84260			
EC	Quality management for building performance - improving energy performance by life cycle quality management		143/5641			
EC	Advanced Networking for Nuclear Education and Training and Transfer of Expertise		340/13412	46/1811		
EC	Multi-scale Composite Material Selection Platform with a Seamless Integration of Material Models and Multidisciplinary Design Framework		2060/81262	445/17564		
EC	Innovative training schemes for retrofitting to nZEB-levels		169/6667			
EC	Bentonite Mechanical Evolution	1533/60473	844/33294		900/35503	
EC	Soil Hydrology research platform underpinning innovation to manage water scarcity in European and Chinese cropping systems		3120/123077		918/36213	1740/68639
EC	Setting up national qualification and training scheme for craftsmen in the Czech Republic and developing the further offer of training courses in Slovakia, Austria and Bulgaria				260/10256	
EC	European Joint Programme on Radioactive Waste Management		1847/72860	1907/75236	2596/102406	13920/549112

EC	ACHIEVING WIDER UPTAKE OF WATER-SMART SOLUTIONS (WIDER UPTAKE)		9386/ 370256		4755/ 187574	1684/ 66430
EC	Towards effective radiation protection based on improved scientific evidence and social considerations - focus on radon and NORM		2008/ 79211		1576/ 62170	
EC	Towards Improved Assessment of Safety Performance for LTO of Nuclear Civil Engineering Structures		3810/ 150296		1839/ 72544	855/33728
EC	Macro and Microplastic in Agricultural Soil Systems			4251/ 167700		
EC	An experimentally-validated multi-scale materials, process and device modeling & design platform enabling non-expert access to open innovation in the organic and large area electronics industry			4508/ 177823		2281/ 89980
EC	Constructionskills project on EE with Circular Construction Skills as a Driver			915/36090		115/4536
EC	Transforming Unsustainable management of soils in key agricultural systems in EU and China. Developing an integrated platform of alternatives to reverse soil degradation			8324/ 328383		4148/ 163629
EC	The Integrator-centric approach for realising innovative energy efficient buildings in				4280/ 168836	
EC	Build up Skills (BUS) initiative in CZ and SK - Rebooting the National qualification platforms and Roadmaps towards implementation of nearly Zero Energy Buildings and support for Renovation Wave				462/18225	772/30454
EC	Valorisation of knowledge for European pre-QUALified steel JOINTS	624/24615		181/7126		
EC	Steel cladding systems for stabilization of steel buildings in fire	1546/ 60986		1001/ 39484		
EC	Valorisation of knowledge for FREE from DAMage steel connections		444/17515	92/3646		451/17791
EC	Mitigation of the risk of progressive collapse in steel and composite building frames under exceptional events		235/9270	5/209	314/12387	
EC	FIre and Seismic performances of Hybrid fire WALLs in case of single-storey industrial and commercial steel buildings			667/26326		451/17791
EC	Accompanying measure for Dissemination, Valorisation and Collaborative Exploitation of circularity of constructional steel products					357/14083
ESA	Support for Galileo/EGNOS Performance Monitoring Activities					218/8600
OTH	EGNOS Service Performance Monitoring Support					299/11795
OTH	Soil erosion in Austria - from mean to extreme					68/2682
OTH	Metrology for multi-scale monitoring of soil moisture					803/31677
Total		87875/ 3434227	98382/ 3880966	98041/ 3867490	99935/ 3942206	3051063/ 120357527

Table 3.3.2 - Contract research activities

Client[28]	Activity name	Revenue (in thousands CZK/EUR)				
		2019	2020	2021	2022	2023
SÚRAO	Engineering barriers - fillings, plugs - long-term research in deep storage				6885/ 271583	3667/ 144636
SÚRAO	Interactive physical models in-situ in PVP Bukov	1935/ 76331	443/17493	298/11759	2695/ 106327	3395/ 133914
Správa železnic	Diagnostics and static assessment of bridges with prestressed load-bearing structures in the district of Prague Municipal Office		3904/ 154005	3926/ 154870		
SÚRAO	Dismantling in-situ experimentu MOCK-UP-JOSEF				229/9015	5470/ 215793
Správa železnic	Diagnostics and static assessment of bridges with overstressed supporting structures	2607/ 102833	2883/ 113735			
PBS GROUP	Bezděkov Castle near Klatovy	1295/ 51088	3515/ 138652			
Správa železnic	Safety monitoring of the bridge at km 3.706 on the track section Prague Vyšehrad-Vyšehrad		1501/ 59226	822/32421	1348/ 53166	220/8672
AKIT	Development of FFP2 respirators with an emphasis on material properties and ergonomics			3798/ 149840		

[28] If the client is from abroad, indicate in brackets the country of origin of the client.

Správa železnic	Diagnostic survey and access to critical points on the bridge - railway bridge at km 3.706 on the Prague Vyšehrad-Vyšehrad railway section					3600/ 142004
BPC Group	Development of composite materials using recycled waste (PET)			3513/ 138580		
Správa železnic	Monitoring, diagnostics and static assessment of the bridge ev. km 35,529 on the line Brno - H.Brod			1151/ 45409	1075/ 42405	1244/ 49069
Hlavní město Praha	Analysis of the Botič area with a significant flood risk within the territorial jurisdiction of Prague			1360/ 53636	2048/ 80794	
SÚRAO	DOPAS - EPSP experiment, extension of operation		1101/ 43432	1287/ 50769	124/4872	507/19984
GEOSAN GROUP	Expert survey		3000/ 118343			
STRABAG RAIL	Modernization of the Veselí n.L. line - Doubí u Tábora, 2nd stage Soběslav - Doubí				2398/ 94614	173/6810
S2O DESIGN AND ENGIN. (USA)	Construction and testing of a physical model to evaluate actual surf wave function			2500/ 98619		
ProSpon	Device for controlled lengthening of long bones			722/28481	900/35512	745/29393
Letiště Václava Havla Praha	Construction technology. assessing the resistance of buildings from the point of view of statics and the dynamic effect of the shock wave	373/14723	46/1825	1688/ 66571		
Tilian	Prague voucher for IP - Comprehensive system of manual purchase and selection of logs			2003/ 78996		
S2O DESIGN AND ENGIN. (USA)	Construction and testing of a physical model to evaluate actual surf wave function		100/3961	1900/ 74935		
Hlavní město Praha	Creation of a document - Standardization of rainwater management in the metropolitan area. of Prague		1320/ 52065	660/26032		
Technická správa komunikací	Material and production analysis of bonded and steel welded and bolted structures on bridge structures according to the contract					1963/ 77420
SÚRAO	MOCK-UP-JOSEF experiment - continuous monitoring and evaluation of in-situ loaded bentonite layer	0/0	1932/ 76194			
Ředitelství vodních cest ČR	Bělov lock - physical hydraulic model research of the lock				256/10085	1653/ 65205
GEOSAN GROUP	Revision assessment of final thesis					1899/ 74911
Správa železnic	Diagnostics and recalculations of strategic bridging in the district of the Ostrava Regional Office - I. stage				410/16179	1430/ 56405
SÚRAO	Design and production of a mixture of bentonite pellets 2	876/34563	924/36443			
Technická správa komunikací	Conducting a diagnostic survey of the Čech bridge		514/20291	1281/ 50518		
ALIMEX S.R.O.	Centralized integrated automated system of online continuous long-term monitoring of building objects		511/20148	1239/ 48885		
Ředitelství silnic a dálnic	D47(motorway) fault analysis Skřečoň - Bohumín bypass		1633/ 64418			
Velvyslanectví Japonska	Embassy of Japan reconstruction project					1626/ 64149
Technická správa komunikací	Analysis of the condition of steel riveted bridges and structures TSK Praha		631/24898	964/38021		
Ředitelství silnic a dálnic	Development of the methodology for the static design and assessment of the underground work - tunnel section	1563/ 61665				
Technická správa komunikací	Hlavakaś bridge in Prague - assessment of the effect of temperature and recommendations for the reconstruction project		1550/ 61144			
GEOSAN GROUP	Final thesis no. 340-23 - FN Motol, Modrý pavilon - price changes and effects of the event					1499/ 59132
ČEZ	Research on the biodegradation of asphalt concrete in the location of the Dlouhé Stráně power plant		22/859	968/38197	488/19234	
Správa železnic	Amendment of the regulation	1435/ 56599				

S2O DESIGN AND ENGIN. (USA)	Woodfin Whitewater Wave on the French Broad River				952/37568	474/18684
Exprojekt	Static calculations of railway bridge structures in the area of the Brno Regional Office		5/193	1407/55492		
GEOSAN GROUP	Kladno General Hospital - reconstruction of block C2					1400/55227
Ředitelství silnic a dálnic	Verification of SMA technology for strengthening the bridge - Desná in the village of Petrov nad Desnou	1376/54284				
PROMSTAL ENGINEERING	Advanced solution for steel halls			431/17007	889/35064	
Správa železnic	Reconstruction of the bridge at km 21,502 of the Rumburk (outside)-Sebnitz (DBAG) line			699/27594	402/15876	124/4891
PONTEX	Carrying out diagnostics of bridges serial no. DO-205..1, DO-205..2, DO-207..1 and DO207..2				156/6164	1055/41600
PONTEX	Řehlovice Bridge		215/8486	991/39108		
Krajská zdravotní	Děčín Hospital - new Emergency pavilion					1190/46943
RČVUT	Research support for deep storage project solution - ZL010	27/1075	1141/44992			
Ředitelství silnic a dálnic	ocessing of an expert opinion on the issue of the load capacity of the bridge SO A210 Prackovick flyover on the construction site D8 0805				571/22543	579/22822
Ministerstvo zemědělství	Independent expert opinions on individual investment actions implemented within the NPO				181/7129	922/36390
SAMSON PRAHA	d1(motorway) - detailed diagnostic survey of the bridge item no. D-147(motorway)		1100/43393			
Inženýring dopravních staveb	Expert opinion			1090/43018		
Povodí Ohře	Study of complex water management. balance of heating residual pits after the end of brown coal mining in the Ústí Region	46/1826	986/38884			
SÚRAO	Operation of the MOCK-UP-JOSEF experiment and provision of dismantling cooperation				1015/40039	
Technická správa komunikací	Technical cooperation for the use of UHPC in the reconstruction of the Barrand bridge				680/26821	320/12627
VÚMOP	Preparation of sheets of measure A sites of agricultural pollution	994/39210				
Velvyslanectví Japonska	Feasibility study for the renovation of the embassy building				994/39199	
OHLA ZS	Modernization of the line Sudoměřice - Votice, SO 73-20-10, 13, 14			314/12394	256/10089	423/16685
Správa železnic	Contract for work		0/0	990/39045		
SÚRAO	Ensuring the operation of the Experiment for the necessary time and providing the necessary cooperation				985/38844	
Povodí Vltavy	Determining the extent of the Úhlava floodplains	956/37695				
ÚJV Řež	Research support for security evaluation of technical solutions of deep storage				245/9656	688/27140
ADELARDIS	Processing of project documentation at the level of DSP, PDPS for the implementation of the repair of the North-South bridge in the area of PZ Škoda in Pilsen		448/17688	464/18288		
POHL CZ	Opatovice-bridge, Waagner Biro - experimental and expert activity					899/35480
GEOSAN GROUP	Expert evidence			890/35108		
Ředitelství silnic a dálnic	Evaluation of the real estate of the ŘSD CR on the basis of price indicators				882/34793	
Správa železnic	Long-term monitoring of the track solution of the bridge at km 32.544 on the line Ostrava Kunčice - Ostrava Vítkovice				124/4901	756/29835
Hlavní město Praha	VD Hostivař, capacitation of the safety overflow, physical model	864/34084				

TSK	Expert activity in the framework of the design of the strengthening of the supporting structure of the Bridge in ul. Průmyslové X512.3, no. action 1000107					853/33667
Krajská zdravotní	Děčín Hospital - new Emergency pavilion including operating theatres, sterilization center and ICU					810/31949
TOP CON SERVIS	Reconstruction of the bridge Kaštice - Kadaň			809/31915		
ČEZ energetické produkty	Research on the stability conditions of the slopes of the residual pit and the future lake			263/10357	537/21201	
Sweco	Dam Pařížov, reconstruction of lower dike outlets + MVE reconstruction and modernization		800/31558			
Centrum dopravního výzkumu	Diagnostic survey of the Ostrovské bridge in Karlovy Vary			800/31542		
FIRESTA-Fišer	Static and dynamic load test of the bridge		795/31361			
Správa železnic	Diagnostics and static assessment of bridges at the Ústí nad Labem Municipal Office 2021			0/0	787/31026	
POZEMNÍ KOMUNIKACE BOHEMIA	Research and consulting services in the development and implementation of the production of 3E asphalt mixture	520/20513	250/9862			
ÚJV ŘEŽ	Exp. assessment of gas permeability of deep storage engineering barriers	770/30356				
KNAUF INSULATION	Durability testing of adhesive tapes			758/29909		
Prague CBD	Exptert evidence			750/29586		
Sweco	A study of the economic benefits of linking Lake Libouš and the Nechranice reservoir					744/29330
Škoda Auto	Evaluation of microclimatic conditions	735/28974				
Česká asociace pojišťoven	Methodology for calculating the unit price of typified types of buildings and indexation values for selected purpose-built buildings				670/26430	60/2367
Česká geologická služba	Assessment of the crack width of the wall of the cooling tower and the storm water ditch in Bruntálsk		5/209	175/6906	550/21682	
ROECHLING ENGINEERIN (DEU)	Shell element for solving plastic containers		714/28172			
SUDOP	Expert activity in the framework of the design of the reconstruction of arched bridges SO 201 and SO 202					702/27707
Statutární město Ostrava	Measurement and analysis of the contribution of vibrations from the tram line at ul.28. October in Ostrava			700/27613		
ČEZ	Hydraulic conditions in the forefield of the inlet to the suctions of reversible systems					692/27298
GEOSAN GROUP	expert activity			691/27254		
Správa železnic	Static recalculation and determination of the load capacity of the bridge - line Hanušovice - Staré město			0/0	670/26430	
GEOSAN GROUP	Project Modernization D1(motorway), section 12	650/25641				
STRABAG RAIL	Long-term monitoring SO 91-20-01 Railway bridge over the Elbe				123/4849	516/20357
Povodí Ohře	Water management solutions for the ČSA and Vršany residual pit sites in relation to other residual pits			47/1869	586/23125	
RFB	Impact assessment carried out at VD Ružbašská Milava	625/24641				
Ministerstvo zemědělství	Support for water retention in the landscape - ponds and water reservoirs	5/196	283/11150	329/12959		
Lankhorst Enineered Prod.(NLD)	Experimental tests					609/24013
PROMSTAL ENGINEERING	Research and development of a modular mobile diagnostic station for the installation and testing of aircraft components			88/3459	512/20210	
Sweco	Physical model research of the lock - Kamýk nad Vltavou			600/23669		
STRABAG ČR	Multifunctional football stadium Hradec Králové					600/23665

Povodí Labe	Krounka, Kutřín, polder construction - verification of the basic properties of concrete	599/23625				
ADELARDIS	Diagnostic survey - North-South bridge in the area of PZ Škoda in Pilsen	592/23353				
Správa železnic	Installation of measuring profiles in the Mezno and Zvěroticky tunnels, long-term monitoring and data evaluation			531/20951	39/1558	
ČEZ	Assessment of navigation conditions by mathematical modeling after the implementation of the plan "Modernization of EOR TG1-TG4"				557/21964	
Povodí Moravy	Multicriteria analysis of VD Skalička variant evaluation	5/180	54/2127	497/19587		
Inženýring dopravních staveb	expert evidence		550/21696			
TESIA speciální tech.práce	Static recalculation of railway bridges 2021			550/21696		
Správa železnic	Carrying out a diagnostic survey - a bridge in Jindřichov Hradec		549/21637			
Výzk.ústav vodohospodářský	Pilot study and establishment of erosion monitoring of target locations	27/1056	60/2361	453/17885		
PKS STAVBY	Expert evidence				180/7097	360/14193
PROSPON	Dental implants		537/21183			
Ing. Václav Jelen	Corrosion survey of elements after exposure on the X Wilsonova bridge, Prague 1			530/20907		
Vodohosp. rozvoj a výstavba	Territorial study of the landscape - Liberec	528/20848				
Město Kutná Hora	Analysis and proposal for a solution to the state of the indoor pool and outdoor swimming pool Kutná Hora Klimeška					512/20206
PROSPON	Dental implants	512/20197				
Povodí Vltavy	Physical model research on fish passage				53/2077	454/17923
TOP CON SERVIS	Reconstruction of the bridge in Loket			504/19880		
DIAMO	expert evidence		500/19724			
Ředitelství silnic a dálnic	Elaboration of design principles				500/19724	
Metrostav Infrastucture	Diagnostic survey of elements ŽM16 and ŽM60			500/19722		
PKS STAVBY	expert evidence				500/19720	
G4D	Design of measuring equipment for efficient and optimized data collection					499/19684
GEOSAN GROUP	Construction of a new Psychiatric Clinic pavilion					498/19645
GEODROM	Combining mobile mapping and profilometer to improve the height component of mobile data. mapping			492/19408		
Statutární město Plzeň	expert evidence		490/19329			
Povodí Labe	Study - Adaptation of the dam Rozkoš to climate change			488/19247		
Město Čelákovice	Monitoring in the watershed and sewage network of the city of Čelákovice	486/19172				
Stavby mostů	Reinforcement of SMA - Captain Jaroš's bridge		109/4294	377/14868		
LIKAL	Innovation vouchers, challenge VI. - Experimental testing of new composite sliding dowels, computational analysis of dowels and simulation of their placement in a cement-concrete slab construction				485/19132	
Správa železnic	Amendment of sample sheet Ž1, revision of related standards			485/19132		
TSK	Underpass at the main station - Sokolská, Kolbenova - carrying out a diagnostic survey	483/19053				
TSK	Carrying out a diagnostic survey of the bridge X-514..1,2 (Želivka)		478/18856			

Metrostav Infrastuctur e	Diagnostics and recalculations of strategic bridging in the area of the OŘ Prague - Stage II					476/18770
Metrostav Infrastuctur e	Monitoring WT - highway D2 - repair of Ladná rest stop - left		136/5356	340/13394		
AirView	Development of an online software application for working with data			475/18745		
ČEZ	Revision of technical calculations, summary reports for EDS locations, ESL methods of flow measurement, consultation				470/18540	
TSK	Conducting major bridge inspections of bridges after repair	469/18501				
TSK	V-028 bridge to Císařská louka, carrying out a diagnostic and corrosion survey		463/18264			
ÚJV Řež	Transport of radionuclides from storage-Transport3	456/17996				
TSK	X540 Wilsonova - assessment of the load capacity and condition of the anchor seats of VO masts		452/17830			
G.L.ARCHITE KTI	Verification of the shape solution of the pools of the Arctic Exposition of the Prague Zoo	450/17751				
Kanska	Multi-generation inactive trackers		448/17683			
TSK	Carrying out extraordinary inspections of bridges according to the contract			444/17507		
WATRAD	Multi-generation inactive trackers	440/17357				
The Steel Constructio n Inst. (GBR)	Structural tests of stainless steel profiles			15/585	424/16738	
AQUATIS	VD Kryry - pre-project preparation				430/16963	
TECHTEST	Footbridge at the Švihov reservoir				20/799	405/15994
Fakulta dopravní ČVUT	Processing of an expert opinion on the FD's expert opinion				422/16663	
Správa železnic	Amendment of TKP SSD Chapter 18 - Concrete bridges and structures		0/0	420/16568		
CHLÁDEK A TINTĚRA	Design work - North-South bridge in the area of PZ ŠKODA in Pilsen			410/16174		
LIKAL	Design and development of quality control of composite mandrels - defectoscopic part of the line verifying the uniformity of the coating on the steel core of the mandrel					409/16115
FUTTEC	Professional consultation - 3D photogrammetric scanning of holes, proposals for structural solutions		405/15975			
ČEZ	Analysis of the Gibson method at the Dlouhé stráně and Slapy power plants			400/15779		
Sweco	Project documentation of the Arctic - polar bears exhibition					400/15779
GEOSAN GROUP	Revision expert examination - time to move the date of handover of the construction Exposition of lions, gibbons and ungulate macaques					399/15740
Hlavní město Praha	expert evidence		398/15700			
Krajská zdravotní	Professional expertise - assessment and answering of the range of questions according to the assignment					398/15700
PONTEX	Surveys - Tram garage Střešovice - ships II, III and IV					396/15611
ROECHLING ENGINEERIN (DEU)	Creation of Work and License Agreement	394/15555				
FIRESTA	Repair of bridge structures on the Brno-Jihlava line, bridge at km 56,462				390/15396	
SÚJB	Evaluation of the effect of a forced ventilation system with an enthalpy heat exchanger on the value of the volume activity of radon in buildings	384/15160				
SÚRAO	Ensuring the operation of the MOCK-UP-JOSEF experiment			382/15058		
1. elektrárensk á	Diagnostic survey of the footbridge at the Podebrady power plant			280/11062	94/3698	
G4D	Prague voucher for Innovation projects - Creation of 3D virtual models			370/14596		
GISAT	Development of the satellite radar interferometry method for the detection of distributed reflectors from time series of satellite measurements			368/14517		

NEN (NLD)	Development of new Eurocodes "Grant Agreement SA/CEN/GOW/EFTA/515/2017-08"	50/1954	14/556	301/11859		
Skanska	Conducting tests - verification of new cements for CBK concretes				77/3037	287/11307
Považská cementáreň	Demonstration of increased fire resistance of H-CEMENT for fire protection	363/14317				
S2O DESIGN AND ENGIN (USA)	Construction and testing of a physical model to evaluate actual surf wave function		360/14201			
SUPER-KRETE CZECH	geodetic survey of the bridge and forecourt, DSPS, ML, HMP	28/1085	333/13116			
ÚJV Řež	Research support for safety assessment of deep. storage-Transport 8	350/13795	10/391			
SUDOP PRAHA	Construction engineering survey for recalculation of existing steel bridges			357/14085		
PROSPON	Application - dental	351/13846				
VPÚ DECO PRAHA	Diagnostic survey - I/26 Sulkov	347/13676				
Povodí Ohře	The Dam Křímov - 3rd operational closure SV DN 800 - processing of hydrotechnical calculations - measurement curve of safety overflows and broth function - top-up					344/13570
Statutární město Liberec	Expert opinion on the construction and technological state of the municipal swimming pool in Liberec				338/13318	
Euro GV	Prague voucher for Innovation projects - Measurement in the field, implementation of data into BIM			338/13314		
TSK	Y 509 Bohdalec - carrying out an extraordinary bridge inspection	0/0	337/13294			
Ústav výzkumu glabální změny	Analysis of retention curves of delivered samples for pedological probes from the Želivka basin			333/13138		
Kloknerův ústav	Diagnostic survey of bridges		325/12821			
Krajská správa silnic	Engineering and consulting activities			323/12730		
FIRESTA	Revision expert examination - embankment in Ostrava					320/12623
DIPONT	Reconstruction of the bridge at km 118,121 - Stará Paka - Liberec			1/32	319/12575	
DIAMO	expert evidence		319/12584			
FIRESTA	Exploratory and static works - reconstruction of the bridge in km 21.502 of the Rumburk - Sebnitz line		314/12370			
PONTEX	Diagnostics and recalculations of strategic bridging in the district of OŘ Plzeň - II. phase					310/12224
KERAMOST	Testing the Bentonite product PressBent				304/11992	
Letiště Václava Havla Praha	Geological survey and static assessment of the APC facility, Prague Ruzyně Airport			300/11834		
Správa železnic	Complex search processing				300/11834	
TechSim.Labs	Providing knowledge to support the development of software for monitoring production machines			300/11834		
GEOSAN GROUP	Expert opinion - FN Plzeň project, construction of a new Psychiatric Clinic pavilion				300/11826	
Povodí Vltavy	Processing of maps of hydrotechnical characteristics of Úhlava	299/11795				
Povodí Vltavy	Update of ZU Mladoticky stream in km 0.0-12.9	5/205	294/11590			
St.pokladna Centrum sdíl.služeb	expert evidence		299/11787			
Povodí Labe	Děčín-KVD		298/11740			
Východoslov. vodárenská spol.	Elaboration of a study of the use of hydropower potential of waterworks facilities					297/11712
PIPELIFE CZECH	Measurement and evaluation of capillary systems			295/11637		
Statutární město Karlovy Vary	Study of water management measures - Spa forests of Karlovy Vary			31/1219	264/10418	

SUPER-KRETE CZECH	X 661 Vysočanská - Liberecká, processing of RSD project documentation	294/11598				
Povodí Ohře	MVE Terezín - design and solution of MVE in the flap weir profile - feasibility study				292/11519	
Považská cementáreň	Demonstration of increased fire resistance of H-CEMENT for fire protection		290/11442			
Stavby mostů	Tensometric measurement of tie rods - road bridge across the Elbe between Valy and Mělice		290/11440			
IDEA STATICA	Probabilistic evaluation of the reliability of selected spruce wood					289/11381
AFRY CZ	Research support - update of findings related to FEPs- DZ02				286/11290	
Pražské služby	Expert analysis of a sorting line for mixed plastics					285/11243
Stavby mostů	Performing a dynamic load test - road bridge across the Elbe between Valy and Mělice		284/11203			
PROJEKT servis	Diagnostic survey - Reconstruction of train station Malá Skála			141/5547	139/5467	
GEOSAN GROUP	expert evidence		279/11006			
Povodí Ohře	Feasibility study of the modernization of MVE Březová				33/1296	242/9552
Vodohosp. rozvoj a výstavba	Vrchlice reservoir basin - water resources	2/77	273/10762			
LUPOFYT	Documentation for issuing a decision on the location of the construction of the Lišany irrigation reservoir		274/10789			
AGRA RISUTY	Implementation of new and innovative technologies of precision agriculture in cultivation systems	269/10606				
Lankhorst Enineered Prod.(NLD)	Experimental tests				267/10517	
ŘSD	Expert assessment of the RSD technical solution			127/5014	139/5487	
Povodí Ohře	the dam Křímov - 3rd prov. closure SV DN 800 - processing of hydraulic calculations - measurement curve of safe overflows and broth function the dam Křímov				263/10375	
Správa železnic	Performing diagnostics of the dynamic behavior of steel bridge structures at speeds of 160-200 km/h.				263/10375	
Pražská vodohosp.společnost	Assessment of the landfill object with a hydraulic model as part of the PVS event				261/10296	
Letiště Václava Havla Praha	Long-term temperature monitoring in selected airport roadway structures	255/10041				
Povodí Ohře	Comprehensive water management solution of new storage reservoirs in the Rakovnické potok and Blšanka basins		254/10036			
KRKI ONE SE	Development of paper-based materials and inert components			250/9862		
SUDOP EU	Reconstruction of the track in the section Kyjice - Chomutov		250/9862			
GLOBALICA	expert activity				249/9822	
ŘSD	I/38 Jihlava-Stonařov-assessment of bridge variants		249/9822			
KŠ PREFA	Prototype tests of railway sleepers			248/9795		
Regionální muzeum Mělník	Revitalization of the grounds of the former Capuchin monastery - Mělník Regional Museum					248/9794
Správa železnic	Diagnostics of riveted constructions of island platforms ŽST Hradec Králové hl.n.					248/9783
Kovové profily	nnovation voucher	246/9709				
PROSPON	Dental implants - proposed solution of the gyroid structure and its mechanical and micromechanical tests, 3D modeling		246/9704			
Ředitelství silnic a dálnic	Elaboration of the closed drainage/pipeline inspection methodology				244/9632	
G.L.ARCHITEKTI	Mathematical verification of the shape solution of the Arctic Exposition pool - polar bears		243/9586			
SÚJB	Update of the manual Radon - building context		240/9454			
Škoda Auto	BRAND 2022 TH bei optimal.Steuerung				240/9448	
ČPS	Analysis of steel samples from V450 and V052 line masts				239/9424	

Röchling Industrial SE (DEU)	Implementation of the RITA-CHOLMOD interface					238/9389
TSK	Carrying out a diagnostic survey to verify the condition of the concrete of the bridge deck slab - Křížová	238/9389				
Ředitelství silnic a dálnic	D11(motorway) 1108 Jaroměř - Trutnov security audit		235/9282			
Sweco	Assessment of the SVL distribution facility in two configurations - ÚČOV - reconstruction of the existing water line			235/9269		
Ředitelství silnic a dálnic	Technical inspection of roads I/33 and I/37 in connection with the opening of the D11 highway			235/9254		
TENSAR INTERNATIONAL	Measurement of laboratory models of a mechanically stabilized layer with geogrids		233/9191			
Ředitelství silnic a dálnic	D11 (motorway)1109 Trutnov - state border CR/PR security audit		231/9103			
VP Projekting	The dam Křímov - reconstruction and capacity building of the waste trough and Img profile			93/3663	137/5410	
Agentura ochrany přírody a krajiny	Study - method of determining the retention potential of water retention measures in the landscape					230/9073
TENSAR INTERNATIONAL	Measurement of railway construction with multiaxial geogrid			230/9073		
TENSAR INTERNATIONAL	Measurement of Geogrid 190L sample			230/9073		
TENSAR INTERNATIONAL	Measurement of the railway structure without a geogrid under the track bed				230/9073	
TENSAR INTERNATIONAL	Measuring railway structure and NXLA geogrids under the track bed				230/9073	
TENSAR INTERNATIONAL	Measuring railway structure and NXLA geogrids under the track bed				230/9073	
ČEZ	Revamping of the mathematical flow model - Dlouhé stráně power plant			225/8876		
Jan Šinták	MVE Liběchov - measurement of water behavior in the drive with evaluation				225/8876	
Ředitelství silnic a dálnic	Assessment of cost-significant bridge objects of construction D35 Staré město - Mohelnice		224/8840			
Vodohosp. rozvoj a výstavba	Territorial study of the landscape - Pilsen	224/8836				
AFRY CZ	Research support - update of findings related to FEPs- DZ02					224/8830
PONTEX	Measurement of 3D deformations in a trio of rigged wells in the Nebozízek locality		32/1256	64/2513	64/2513	64/2513
Stavby mostů	Expert opinion state.-tech. state of the bridge structure - Prackovice			220/8679		
Ředitelství silnic a dálnic	Consulting and advisory activities in the field of design, implementation and operation of roads				219/8619	
Ředitelství silnic a dálnic	Independent control and supervision I/29 Podolsko, bridge ID no. 29-003	0/0	25/990	89/3516	47/1838	57/2238
Ministerstvo pro místní rozvoj	Processing and evaluation of the physical behavior of the model building					207/8166
TSK	X005 footbridge Královka - carrying out a corrosion survey, recalculation of load capacity		207/8166			

University of Natural Res. (AUT)	Numerical solver for particle models		206/8145			
Ústav informatiky AV ČR	Collection of spatial geodata on energy properties of buildings		206/8121			
GEOSAN GROUP	expert activity, ZP no. 303-19	200/7890				
Ředitelství silnic a dálnic	Reference project of bridge SO 201, I/27 Plasy - bypass					200/7890
Ředitelství silnic a dálnic	D11 (motorway) 1109 Trutnov - st. border of the Czech Republic/PR opposing opinion of the geotechnical monitoring project					200/7890
Rezidenční park Baarova	expert evidence	200/7890				
REMING CONSULT (SVK)	Modernization of the Púchov - Žilina railway line	199/7850				
TENSAR INTERNATIONAL	Static and dynamic board test		199/7850			
P3 LOVOSICE PARK	Inspection and consulting activities - P3 Parks Lovosice		198/7823			
Povodí Vltavy	Sport culverts					197/7787
FIRESTA	Removal of the emergency condition of the bridge at km 142.475 on the Břeclav - Brno line, implementation of SZZ on the arches					197/7773
Plzeňský kraj	Price analysis for the event - Křimická-Karlovarská urban circuit section					197/7771
Škoda Auto	Architectural solution of the ŠKODA AUTO area		197/7771			
Ředitelství silnic a dálnic	D10 (motorway) modernization, exit 0 - exit 46, PK security audit - 1st phase			195/7700		
HV ateliér	Prague voucher for Innovation Projects		195/7692			
Stat. město České Budějovice	Diagnostic survey of the Long Bridge, ID No. CB-002	195/7692				
REALACTIVA	Expert activity in the framework of the design of the construction solution of icebreakers and swimming pool - MOLO Lipno Bazén					195/7683
Vodohosp. rozvoj a výstavba	Analysis of areas with a significant flood risk, PPO proposals	191/7546				
PHOENIX lékárenský velkoobchod	Expert opinion			190/7495		
Centrum dopravního výzkumu	Diagnostic survey - Most ev. no. no. 230-014 near Třebele					186/7349
Povodí Vltavy	Determination of the lower boundary condition for the needs of assessing the safety of VD Štěchovice during the passage of Q10000					186/7337
CENTRAL GROUP	technical study of the feasibility of an underpass under the railway line - ul. Mlýnská, Prague 6				185/7298	
ERGON	technical study of the feasibility of an underpass under the railway line - ul. Mlýnská, Prague 6				185/7298	
MGR. Jindřich Kukačka	technical study of the feasibility of an underpass under the railway line - ul. Mlýnská, Prague 6				185/7298	
SNP šumava	Field measurement and mapping of beaver dams in the Křemelná basin					185/7298
SUDOP EU	Reconstruction of the track in the section Kyjice - Chomutov			182/7179		
SÚJB	Development of the Methodology for the optimization of anti-radon measures			182/7172		

VP PROJEKTING	Hydrotechnical calculations - MVE Ratowice		180/7101			
Cenrum výzkumu Řež	Complementary assessment of the geological and tectonic conditions in the area where the LVR-15 reactor is located					180/7101
Sweco	Areas with significant flood risk - Vltava	178/7010				
TSK	Most, V013, ČECHůV MOST, Čechův, PRAGUE 1 - processing of a single-stage PD for the replacement of handrail consoles				177/6974	
TOP CON SERVIS	Diagnostic survey - bridge over riverOhře in Cheb	175/6915				
PONTEX	Diagnostics and static assessment of bridges with a prestressed supporting structure		175/6903			
SUDOP PRAHA	Experimental verification of blasting and corrosion removal methods on the bridge under Vyšehrad	172/6793				
TU v Liberci	Assessment of barriers - Research support for the safety assessment of the technical solution of deep storage VVZ 354205				168/6622	4/164
Ústav informatiky AV ČR	Collection of spatial geodata on energy properties of buildings	170/6719				
VINTEGRA	Static and dynamic monitoring of bridge structures-tech. Help	169/6664				
STRABAG RAIL	Static and dynamic load test - railway bridge 003B, analysis of the bridge using an exciter			168/6607		
STRABAG RAIL	Static and dynamic load test - railway bridge 003B, simulation of system operational failures			168/6607		
BM CONSTRUCTION	RDS Čechova mostu - railing			166/6564		
SÚJB	Study of the applicability of anti-radon measures on heritage-protected buildings					165/6520
UK Přírod.fakulta	Isotope analyzes of hydrogen and oxygen in water samples			165/6520		
BORABELA	Bearing capacity of connections of cold-formed steel profiles			165/6515		
VaK Mladá Boleslav	Monitoring rain gauge campaign - Luštěnice, Chotětov			165/6509		
Ústav informatiky AV ČR	Collection of spatial geodata on energy properties of buildings and their surroundings			163/6410		
Povodí Vltavy	A comprehensive water management solution for anti-flood measures in the Klabavy basin					162/6396
NKÚ	Evaluation of bids submitted by bidders in the procurement procedure for the selection of the contractor for the construction of the SAO headquarters		160/6292			
VODNI DILA-TBD	Stability assessment of the ZAHESI concrete gravity dam				159/6273	
Povodí Vltavy	Štvanice waterworks - interactive model		159/6260			
Povodí Vltavy	Water management solution of the multi-purpose reservoir Klabava na Klabava					158/6249
Městská část Praha 6	Use of rainwater in Královka park - study		158/6215			
PREDITEST	Tensometric measurement of the tension forces in the ropes of the flare at the construction of Basrah ? Iraq			155/6121		
Považská cementáreň	Tests of cement with a higher content of belite				28/1085	126/4989
GEMA ART International	Expert consulting for the client's monument projects in Iraq, studies, architectural designs	154/6059				
Povodí Ohře	Water management solutions for sites of residual pits after brown coal mining for the expected termination of mining in 2030 and 2038				154/6059	
Ředitelství silnic a dálnic	I/9 - Revision of performed diagnostic surveys	154/6059				
Vinařství LUDWIG	Evaluation of the isotopic hydrological situation of natural waters in the locality of the streams of South Moravia			153/6031		
TOP CON SERVIS	Diagnostic survey - SŽDC Pilsen bridges	153/6025				

Státní fond podpory investic	Determination of limits for determining reasonable operating costs for the purposes of the calculation model for the maximum amount of support in the Rental housing program					152/6015
ADELARDIS	Technical supervision of the investor - the North-South bridge in the area of PZ Škoda in Pilsen			151/5940		
ELZACO	Research and development of spiral Kaplan turbine			150/5917		
Hlavní město Praha	Clarification of doubts raised by the participant in the proceedings regarding the plan - Construction of a water supply system for the boiler room of the New Town Hall					150/5917
Hlavní město Praha	Professional cooperation in the creation of films/videos on the topic of rainwater management in the territory of the capital. m. of Prague					150/5917
L. Klíma Automatické mlýny Křesín-Libochovice	Carrying out a CFD analysis of water flow in the sub-reservoir under specified boundary conditions		150/5917			
Ředitelství silnic a dálnic	Assessment of the condition of the bridge before the start of construction modifications, I/12-most 12-020d	150/5917				
Ředitelství silnic a dálnic	expert evidence	150/5917				
TESIA speciální tech.práce	Supervision of facilities - Modernization of the line Brno - Přerov, Blažovice-Vyškov, Vyškov-Nezamyslice				150/5917	
SKANSKA	Long-term monitoring of Whitetopping				103/4081	46/1825
Ředitelství silnic a dálnic	Assessment of bridge variants - I/42 Brno, MÚK Ostrava radial			149/5893		
Správa železnic	Diagnostics of bridges in the district of OŘ Brno - track section 2001	149/5878				
Jihomoravský kraj	Processing of the study - Hevlín - wetland on Černá Strouza			148/5838		
ČAS	Adoption of the technical standard by translation of task no. 73/0100/21				147/5799	
Ředitelství silnic a dálnic	D47, building I/67 Skrečoň - Bohumín bypass, SO 201 - supervision of the repair project		3/109	143/5650		
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Povodí Vltavy	Water management solutions for the Římov water reservoir and the prospective Chlum water reservoir			142/5586		
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OHLA ŽS	Tests of shotcrete				140/5523	
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VUT BRNO	Advanced materials to improve grounding in lightning and surge protection systems	134/5302				
Komerční železniční výzkum	DPK measurement with the Krab measuring truck on the line Prague hl.n.-Prague Běchovice			133/5260		
Ústav výzkumu glabální změny	Analysis of retention curves on supplied samples		133/5249			
TSK	SO28 European - execution of an extraordinary inspection	129/5089				
Ústav výzkumu glabální změny	Analysis of data from external long-term experiments				129/5086	
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Povodí Ohře	VD (waterworks) Křímov - 3rd operational closure SV DN 800 - processing of hydrotechnical calculations of lower outlets				128/5049	
Letiště Václava Havla Praha	Measurement of PVV RWY's in 2021 and 2022			71/2785	57/2256	
Sweco	Areas with significant flood risk - Ohře	127/5026				
JEAN PAUL WHITECASTLE	Production of test plates from UHCP manufactured according to the recipe of patent no. 304478				127/5011	
Lankhorst Enineered Prod.(NLD)	Experimental tests	47/1839	80/3160			
PONTEX	Boreholes for control monitoring-Petřín Cable Car	127/4999				
OBEC SRBSKO	Diagnostic survey of the footbridge over Berounka			125/4936		
Česká zemědělská univerzita	Derivation of design rainfall maxima for surface water bodies		125/4931			
SUDOP PRAHA	Double-tracking of the Branický most - Praha Krč line - inspection and measurement on the bridge facility				123/4868	
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TPA ČR	Tests to determine the residual strengths of fiber concrete - with a notch					120/4734
Ústav informatiky AV ČR	Collection of landcover spatial geodata for the model domain in the wider vicinity of the capital city. of Prague			120/4734		
Škoda Auto	Urban planning solution Starý závod ŠA				119/4694	
Velvyslanectví Japonska	Feasibility Study - 2 Paperwork				40/1596	75/2964
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Povodí Ohře	Modernization of PAT TG4 - MVE Jesenice - stage I - study					115/4536
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STYL 2000	Performing laboratory tests on the supplied samples - VIBRO S2K RAIL PU2			111/4359		
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EXPECT-IT	Provision of experimental data and consultation				109/4319	
ÚJV Řež	Pilot corrosion experiment in PVP Bukov			0/0	10/384	99/3903
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DOOSAN BOBCAT EMEA	Evaluation of the exploitability of the soil on the CPG		42/1657	52/2049	12/487	
Městská část Praha 6	Technical study of the feasibility of an underpass under the railway. track - Mlýnská street, Prague 6			105/4142		
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Národní kult.památka Vyšehrad	Background study - measurement and evaluation of the visual comfort of the visitor in the existing lighting of the NKP Vyšehrad				80/3156	
Letiště Václava Havla Praha	Measurement of PVV characteristics of RWY's 2023					79/3131
Vinařství LUDWIG	Consultation and measurements for the description of the isotopic hydrological situation of natural waters in J. Moravia for the years 2020/2021				79/3130	
Sweco	Creating an assessment of the economic effectiveness of flood protection Neratovicko					79/3116
Úřad městské části Praha 7	Experimental tests			79/3109		
Středočeský kraj	Design of the operational background of Bohumil Hrabal's cottage in Kersk				79/3097	

Lesy ČR	Assessment of plans on the Měkynecká stream for the municipalities of Bílinsko and Měkynec - flood prevention program					78/3093
Ředitelství silnic a dálnic	Assessment of bridge variants - 139-I/11 Oava Komárov, southern bypass			78/3089		
FIRESTA	Odstranění havarijního stavu mostu v km 142,475 na trati BřRemoval of the emergency condition of the bridge at km 142.475 on the Břeclav - Brno line, evaluation of the SZZ on the archeseclav - Brno, vyhodnocení SZZ na klenbách					78/3077
Agentura ochrany přírody a krajiny	Evaluation of the sedimentation of the Dobroměřické Pond	77/3032				
AFRY CZ	PPP Feasibility Study - Nemanicee-Ševětín Project					75/2959
FORTIS BOHEMIA	expert evidence				75/2959	
JACOBS CLEAN ENERGY	Assessment of the impact of erosion, sediment deposition and the occurrence of flood sediments on the Hněvkovice Watershed and the Kořensko discharge facility				75/2959	
METROSTAV	Reconstruction of the Imperial Baths		75/2959			
METROSTAV	Identification of the location of the seepage of the VD Orlík construction pit by the ADCP method					75/2959
Ředitelství silnic a dálnic	I23 Vladislav, bypass - assessment of bridge variants		75/2947			
Ředitelství silnic a dálnic	I/34 Tower - Skála			75/2947		
Ředitelství silnic a dálnic	Assessment of technical solutions of cost-important bridge objects from the point of view of investment demands-I/50 Bučovice bypass			75/2947		
Město Slaný	Construction and technical survey of the fencing of the sidewalk along the BENAR park				74/2919	
VUT BRNO	Compilation of specific methods for basic testing of materials for masonry sewer shafts	74/2916				
Centrum dopravního výzkumu	Processing of the diagnostic survey of the bridge: III/34526 Bezlejov - bridge ID no. 34526-2				74/2903	
Vodohosp. rozvoj a výstavba	Territorial study of the landscape - Nová Paka	74/2899				
Ředitelství silnic a dálnic	D1109 Rest areas Bernartice and Královec - safety audit		73/2872			
SUDOP EU	Diagnostic survey of the bridge at km 57.255 (Vrskmaň flyover)		72/2856			
STRABAG RAIL	Scanning and evaluation of the imperfections of the NK beam					72/2856
TO SYSTEM	Static load test of the ceiling of ZŠ Smidary				72/2842	
JEAN PAUL WHITECASTLE	Production of test plates from UHCP manufactured according to the recipe of patent no. 304478				72/2836	
Město Vimperk	Expert opinion - Water sports complex Vimperk		70/2768			
Krajská správa silnic	Engineering and consulting activities				70/2761	
LHOTKA LIVING	Assessment of the proposed method of securing the foundation pit - apartment building in Lhotka		70/2761			
Povodí Labe	Expert opinion for determining the accounting reserve for the costs associated with the implementation of insurance. work during floods					70/2761
Povodí Moravy	Expert opinion of the accounting reserve for the costs associated with the implementation of insurance. work during floods					70/2761
Povodí Odry	Expert opinion for determining the accounting reserve for the costs associated with the implementation of insurance. work during floods					70/2761

Povodí Ohře	Expert opinion for determining the accounting reserve for the costs associated with the implementation of insurance. work during floods					70/2761
Povodí Vltavy	Expert opinion for determining the accounting reserve for the costs associated with the implementation of insurance. work during floods					70/2761
Muzeum Českého krasu	Architectural study of improvements to the area of the Museum of the Czech Karst					69/2714
PORR	Measuring the width of cracks in the bridge item no. D1-2020, right and left bridge		69/2705			
MYMOBILE+ LTD (GEO)	Isotope analyzes of hydrogen and oxygen in water samples				68/2669	
Město Neratovice	PPO Neratovick - update of the technical and economic solution		67/2643			
SKANSKA	CBK monitoring on the construction site D137 Přerov - Lipník nad Bečvou			0/0	67/2641	
STRABAG RAIL	Securing underpass heights on the Vltava waterway Ia. Stage: Vraňansko - Hořínský canal					67/2639
AMPeng	Computer simulation of the movement of people for the Horácká multifunctional arena			66/2608		
OM CONSULTIN G	Thermal imaging of the electrical wiring of the Cube and DHL buildings in the CTPark Cheb area					66/2604
DHI	Determination of the amount of sediments captured in the cascade of small water reservoirs in the Amálie locality	65/2569				
Česká zemědělská univerzita	Determination of the amount of sediments captured in the cascade of small water reservoirs in the Amálie locality				65/2564	
Krajská správa a údržba silnic	Assessment of the repair of the bridge No. 125-034 over the Elbe in Kolín			65/2564		
LIBERTY Ostrava	Making an assessment of mine steel reinforcement					65/2564
Ředitelství silnic a dálnic	D11 SSÚD Střítež - security audit		65/2564			
ÚJV Řež	Research support for safety assessment of deep. Repository- Final Report	64/2540				
Městská část Praha 7	Project management and professional supervision of the contracting authority within the project "River of sidewalks in Janovského Street, Prague 7!	39/1542	25/982			
PKB	Provision of a software application to optimize the repair of asphalt layers		64/2525			
TSK	Most X540, Wilsonova - bridging Masaryk station			64/2525		
Ředitelství silnic a dálnic	D35 Sadová - Plotiště, Střezetice rest area - security audit	64/2513				
DEKONTA	Conducting hydrophysical analyzes of substrate samples for green roofs				64/2509	
SUDOP EU	Diagnostic survey of the bridge at km 59,483		63/2472			
SUDOP PRAHA	I/20 Chválenice, construction overlay - DÚR + IČ			26/1026	34/1339	2/84
PVK	Static rain gauge calibration and 10 dynamic rain gauge calibrations			62/2446		
SKANSKA TRANSBETO N	Concrete temperature measurement test				62/2446	
Západočesk á univerzita v Plzni	Geophysical survey for the needs of archaeological research - Landscape as knowledge			62/2445		
AGC GLASS EUROPE (BEL)	Conducting tests	62/2426				
GMF AQUAPARK PRAGUE	Assessment of water vapor from the water surface in Aquaoalace Praha	61/2417				

Advokátní kancelář Němec,Bláha a Navrátilová	Expert assessment and consultation on the issue of the price of multiple works on the sewage system project	60/2367				
AVERS	expert evidence	60/2367				
DIAMO	Expert opinion - Feasibility study of house repairs - Dolní Pochlovice	60/2367				
Město Vyšší Brod	Professional expertise - static assessment of the former school in Vyšší Brod					60/2367
Nemocnice Třinec	Implementation of the construction time model Rehabilitation of the T pavilion					60/2367
PUDIS	I/27 Klatovy, bridge ID no. 27-094, replacement of elastomer bearings - DSP+IČ, PDPS, AD			60/2367		
Česká zemědělská univerzita	Analysis of elements in liquid samples of surface runoff by the method of atomic absorption spectrometry		60/2364			
OHLA ŽS	Long-term monitoring of railway bridges SO 73-20-10, SO 73-20-13, SO 73-20-14 after damage by underfilling					60/2360
Městská část Praha 6	Preparation of a verification study of the functional use of the territory of the Císařské mlýn and the grounds of the Provost's Court for educational purposes				60/2356	
Nad.fond Svatovítské varhany	Measurement of deformations in the area of the western kruchta sv. Welcome to Prague Castle				60/2347	
PRVNI STATICKA	Building technical survey - Opatovská garage			59/2336		
Česká zemědělská univerzita	Special subsequent analysis of biochar - isotopic analysis of hydrogen and oxygen		59/2323			
PROMSTAL ENGINEERING	Carrying out tests and evaluating the bearing capacity of steel hinges in accordance with ČSN EN 1990				58/2297	
VÚ monitoringu a ochrany půdy	Amendment TP 53 - anti-erosion measures on road slopes - processing of chapter 4					58/2288
Správa železnic	Measuring the platform surface with a pendulum - Ústí nad Labem, Jaroměř			58/2285		
STRABAG RAIL	Fitting and measuring with strain gauges the deformation of the HNK bridge					58/2280
Centrum dopravního výzkumu	Diagnostic survey of the bridge ID no. 210-002 behind the village of Krsy					57/2249
GEMA ART INTERNATION	Documentation of historic objects, targeting with a laser scanner and photogrammetrically creating 3D models					56/2220
Správa národního parku	Assessment of the condition and bearing capacity of dynamic barriers in terms of fire damage					56/2193
Centrum dopravního výzkumu	Processing of the diagnostic survey of the bridge: III/34520 Jeřišno - bridge ID no. 34520-1				55/2178	
Jan Brodský	Estimation of the usual market value of real estate - plot no. 345/1 and 345/2 in the cat. area Krč, Prague					55/2170
JRD	Measurement of temperature and relative air humidity at several points in the space at the same time in both apartments and outdoors	55/2170				
ARCELORMITTAL CONSTR. (SVK)	Development of static tables for TR85					54/2130
DHI	Measurements on soil samples		54/2119			
Krajská správa silnic	Carrying out an expert assessment of the PDPS documentation of the bridge 290-023 Poniklá		53/2103			
TENSAR INTERNATIONAL	Testing the propagation of shock waves in the environment of aggregates 8-31.5 mm		53/2091			

Městská část Praha 7	Project management and expert supervision of the client within the Revitalization of Ovenecká Street project	34/1331	19/752			
CASTINGO	Test of concrete in compression according to ČSN EN 12930-3 and in tension under bending according to ČSN EN 12390-5 on the supplied samples					53/2071
CZECH PAN	Static load tests of I-OSB beams	52/2063				
Správa železnic	Inspection of steel supporting structures of bridges					51/2017
TBG METROSTAV S.R.O.	Tests - equilibrium moisture, hydroscopicity of dried sample, determination of volcanic and desorption curve, relationship between gravimetric and CM method				51/2012	
Jan Šinták	New retention tank at WWTP + ČKV Sever, Prague airport	50/1981				
ARCELORMITTAL CONSTR. (SVK)	Processing of profile bearing capacity tables	50/1972				
ELZACO	Technical consultation in the design of the concept of a simple propeller turbine with a fixed radial distributor in a fountain arrangement				4/157	46/1815
Fakultní nemocnice Plzeň	expert evidence		50/1972			
GEOSAN GROUP	expert evidence		50/1972			
Hlavní město Praha	expert evidence	50/1972				
Hlavní město Praha	expert evidence	50/1972				
Jihomoravský kraj	Úprava textu učebnice Vliv člověka na koloběh vody	50/1972				
Veronika Miláčková	Editing of the text of the textbook Human influence on the water cycle		50/1972			
NKÚ	Expert opinion on the Optimized design of the SAO headquarters building	50/1972				
PUDIS	Carrying out diagnostics of the bridge I/32,32-001e with evaluation of tests		50/1972			
Severní energetická	Height measurement of the control points of the purpose-built leveling network of the Ore Mountains 2023					50/1972
SKANSKA	Trial analyses	50/1972				
Společnost pro obnovu Mariánského sloupu v Praze	Processing of 3D documentation of the original statues from the Marian Column in Prague's Old Town Square			50/1972		
STRIX CHOMUTOV	Proposal for the location of the ballistic protection of the large excavator rollers in the Bílina mine	50/1972				
Others, each below 50k CZK		2055/ 81079	2052/ 80965	1543/ 60875	775/ 30577	2672/ 105391
Total		36138/ 1425544	53415/ 2107116	65646/ 2589598	48638/ 1918665	62600/ 2469444

Note: List and describe contract research activities with a revenue in a given calendar year, regardless of the amount of financial revenue.

3.4 Research results with existing or prospective impact on society

The evaluated unit shall briefly comment on a maximum of 10 (considered most significant by the evaluated unit) research results already applied or realistically heading towards application during the period of 2019–2023, based on the overview annex table 3.4.1 (it is recommended to indicate results with a link to projects listed in indicator 3.3). The evaluated unit must demonstrate in its description that the research results have led or will soon lead to positive impacts[29], on society (e.g. description of how the results are used by various users, the range of persons/institutions for which

[29] See Terms definition.

the result is relevant, measurable economic impacts, etc.). The evaluated entity shall indicate in its commentary whether the gender dimension is considered in these results and discuss the impacts of the results regarding sustainability.

Maximum range 300 words/result.

Self-assessment:

VLTAVA Changes in the Historical Landscape, 2022, ISBN 978-80-01-07084-0.
The book documents the changes in the historical landscape around the Vltava River in a unique and systematic way. It provides an interpretation of the various aspects of landscape transformation, whether in the form of physical changes, or in the form of socio-economic impacts on the population living around the river. The individual phenomena associated with the Vltava - timber floating, the transport function of the river, tourism and tramping are described. New information is revealed and presented using new methods such as unmanned aerial vehicle surveys and sonar measurements of the river bottom. The book also includes a section dedicated to specific extinct sites around the Vltava. In terms of social relevance, the impact of the book is mainly in the areas of society and culture, and partly in the environmental field. Knowledge of changes in the historical landscape is essential for understanding the processes associated with major interventions such as the construction of the Vltava Dam Cascade or the displacement of the German population. The book is supplemented with a series of maps and photographs. The book is unique in its comprehensive treatment of the historical landscape surrounding the river. Such a treatment is unique even on the world scale. The uniqueness also lies in the cooperation of several experts in technical fields and social sciences. Maintaining information about the old landscape is one of the key issues in today's river revitalisation and improvement. Locating sites and individual phenomena on maps and historical photographs helps society realize the symbiosis of man and landscape. The book has been very well received in the geographic and cartographic community and is almost sold out.

European Design Guide for the Use of Weathering Steel in Bridge Construction, Brussels: ECCS European Convention for Constructional Steelwork, 2021. ISBN 978-92-9147-171-3.
On 86 pages, this comprehensive guide book covers the latest state-of-the-art knowledge and includes results of the latest research in the area of weathering steel. The importance of weathering steel is rising because of the increasing demands for sustainable materials with low maintenance and circular solutions for bridges. The weathering steel can be used without painting during the life cycle. If properly done, designs that exploit weathering steel can strongly reduce emissions from the painting and blasting of coating (usually done 4x in the bridge lifetime), reduce the emissions from traffic restrictions during bridge paintings, and thus significantly contribute to sustainable development (see, for example, http://www.designlife-cycle.com/corten-steel-1). The author team comprises 22 well-known experts in the area, who bring in the experience of the European bridge community. Nowadays, this book is the most recent document on the use of weathering steel in practice. It is promoted and cited on the websites of most of the steel research institutes, such as ECCS, Constructalia, Stålbyggnadsinstitutet, SSAB, librosingenieria, Teräsrakenneyhdistys.

Czech historical atlas (Český historický atlas), Software, 2020.
The web map portal Czech Historical Atlas (https://cha.fsv.cvut.cz) provides a comprehensive view of Czech history in the context of Central Europe in the form of interactive maps, using almost 200 map applications. The portal is unique on the global level, because historical maps are usually presented only in their static form. The processing of the maps has been very well prepared by erudite experts in the fields of history and historical geography. Cartographically, the maps are processed in the form of web map applications in Czech and English versions. The use of new web mapping technologies, such as the use of time sliders or object interactivity, provide new perspectives on historical events and can better shape the view of Czech history. From a professional point of view, the portal shows how historical information can be transferred to the web and presented appropriately. In 2020, the web map portal was awarded the Map of the Year prize in the Digital Cartographic Products category by the Czech Cartographic Society (https://geomatics.fsv.cvut.cz/en/cesky-historicky-atlas-ziskal-titul-mapa-roku-2020/). It is a unique project that enables society to better understand history and allows visualization of previously unpublished phenomena. The social impact of such a portal on society is thus enormous. The portal has had more than 80 thousand unique accesses on the Internet in the last 3 years, of which approximately 10 thousand are foreign.

Methodology for the evaluation and protection of buildings from the second half of the 20th century (with a focus on the architectural heritage of the 1960s and 1970s) regarding their (possible) monument protection, 2020.
The methodology approved by the Ministry of Culture (MK 25708/2020 OVV) was the main result of the project DG16P02R007, implemented within the NAKI II programme, funded by the Ministry of Culture of the Czech Republic. The aim was to establish a methodological procedure for research, identification, documentation, registration and evaluation of architecture of buildings and building units designed and constructed in the second half of the 20th century in the Czech lands of the former Czechoslovak Socialist Republic. The methodology is based on research into the architecture of the 1960s and 1970s, but its basic procedures are generally applicable to 20th century architecture. The aim is to contribute to general

awareness of the values of the hitherto overlooked architectural heritage in the Czech Republic and to general information about the possibilities of its protection. The methodology builds on the project database of buildings and complexes examined, together with an expert interactive map, publicly accessible in the open application of the Monument Catalogue within the Integrated Information System for Monument Protection (PK IISPP) of the National Monument Institute where, through keywords, address, fulltext or map searches, experts as well as the general public can obtain essential information and use it in the evaluation of selected buildings and building complexes. The intended users are the staff of the monument care in both the professional and executive components, i.e., employees of the professional institution National Heritage Institute and officials of the monument care units of regional authorities and municipalities with extended competence.
https://www.yumpu.com/cs/document/read/65069406/metodika-hodnoceni-a-ochrany-staveb-2-poloviny-20-stoleti.

Benchmark cases for advanced design of structural steel connections - Third extended edition, Prague, CTU Publishing House, 2019. ISBN 978-80-01-06565-5.
This publication describes, on 245 pages, the newly developed Component-based method of finite element design. This method combines analytical models of components, bolts, welds and anchor bolts with finite element analysis of steel plates. It allows users to simulate the behaviour of steel structures using a model of joints with shell elements with reasonable accuracy. Open section joints are solved by material nonlinear analyses with imperfection using the assumption of small strains, while the analyses of hollow section joints consider large strains. The method is used in 86 countries and, due to its generality, replaces the previous analytical models. Implementation of FEA models allows one to properly analyze and design generally loaded joints with complex geometries. Engineers can thus quickly and accurately assess the buildability and safety of steel projects, regardless of the complexity of steel connections. Benchmark cases for validation and verification procedures of structural steel joints are described in the last chapters. The validation and verification hierarchy is prepared for welded and bolted connections as well as for column bases. Each benchmark case starts with a task description and includes results of prediction by an analytical model according to EN 1993-1-8, references to experiments, a validated model and numerical experiments, results of prediction by Finite Element Analyses described in terms of global behavior, and verification of resistance. The readers can check their calculations for benchmark cases prepared for particular joints. This publication is used worldwide to teach the new design method and by at least five software manufacturers to prepare their programs and verify their appropriate use. The readers are structural engineers and fabricators involved in steel projects.

Open-source, multi-physics, parallel finite element code OOFEM.
OOFEM, originally developed and actively maintained at FCE, has advanced and unique features, including state-of-the-art models for nonlinear fracture and damage mechanics of quasi-brittle materials, advanced models for linear and nonlinear statics and dynamics, stationary and transient (linear and nonlinear) heat transfer and coupled heat and mass transfer problems and transient incompressible flow analyses. The code is used worldwide in many academic and research organizations (e.g., Chalmers University, VUT Brno, Northwestern University, University of Glasgow, University of British Columbia, University of Sassari) and has been applied to commercial problems (CEZ – long term analysis of NPP containment, HILTI – anchor design, Metrostav – condensation in tunnels, FKS BVBA – design of steel profiles, Lafarge – prediction of hydration kinetics, European Space Agency – throttle design). Developed and actively maintained since 1993 with more than 600 registered users on the OOFEM user forum, 2019-2023, **www.oofem.org**.

Heritage procedure for diagnostics, inspection and assessment, renovation and strengthening of industrial heritage bridges. Procedure for the survey, assessment, repair and strengthening of industrial heritage bridge structures, which provides a common platform for communication between the professional professions and the heritage authorities. It is intended for designers who propose diagnostic methods necessary for the structural assessment of a historic bridge, methods for bridge repair and reconstruction, and for heritage professionals who supervise survey, design and implementation work on listed buildings. It provides designers with information on the basic principles of decision-making in conservation. For conservationists, it presents an overview of diagnostic methods and procedures for repairing and strengthening historic steel bridge structures, including information on their capabilities and limitations. The goal is to find survey procedures and methods that ensure the highest quality of information obtained about the structure and its materials while minimizing the negative impact on its heritage value. The heritage procedure respects the heritage values of historic metal bridges and provides procedures leading to minimal intervention on the structure during the diagnostic survey and a basis for restoration design, thereby helping to preserve these heritage assets for future generations. The economic impact resulting from the extension of service life is in the order of tens of millions of CZK. The gender dimension can be estimated as balanced. The procedure was created in 2022 with the support of the Ministry of Culture of the Czech Republic within the Programme for Support of Applied Research and Experimental Development of National and Cultural Identity within the project "Methods for Ensuring Sustainability of Steel Bridge Structures of Industrial Cultural Heritage" with reg. no. DG18P02OVV033.

Regulation for Building Information Modeling (BIM) for transport infrastructure - Data standard. The regulation is used in the preparation and implementation of road, railway and waterway constructions provided by the departmental investor organisations (Railway Administration, Waterways Directorate) on selected construction sites. In the years 2021-2023, there

were about 35 projects with an investment value of over 1 billion EUR. The regulation is used to digitalize these projects, i.e. to streamline the preparation and implementation of infrastructure constructions, including their environmental impact. The Code has been used by the ministerial investor organisations as part of the terms of reference for the selection of designers or contractors. This regulation was issued by the State Fund for Transport Infrastructure and certified by the Central Commission of the Ministry of Transport. The code was also approved in two rounds by the so-called Technical Drafting Team and the SFDI BIM Council, where practitioners are represented through associations such as CACE, SVS, SPS and ARI. The Rules of Procedure and the Certified Code itself are publicly available (https://sfdi.gov.cz/bim/) and therefore for use by the general professional public. The use of the regulations can be traced on the publicly available contracting authority portals for specific projects and framework contracts. A number of suppliers have implemented the Code in their software for the preparation of digital models of buildings (e.g. AutoCAD Civil 3D, Benteley Road and Rail Designer and Roadpac). The text of the regulation avoids gender stereotypes and uses language that respects gender equality. The regulation is intended to improve the quality of infrastructure construction projects and to make the preparation and implementation of such projects more efficient through digitalization.

Certified methodology for protecting soil from erosion through climate - and environmentally friendly agricultural practices, 2021. The methodology is based on more than 400 measurements of soil loss by erosion using a rain simulator on the most common crops and their cultivation technologies in Czechia. It evaluates methods of erosion control on farms that will be effective and feasible without the use of glyphosate and that will not compromise the competitiveness of Czech agriculture. In line with the objectives of the Common Agricultural Policy, the anti-erosion effect for the most widespread technologies was evaluated. A comprehensive compilation of the vegetation protection factor values as well as a list of verified crops with intermediate values of the sediment removal ratio is provided. In practice, the erosion hazard assessment is part of all land improvement projects and is a necessary component in the subsidy applications from EU programmes. The outputs are useful both for policy setting and as an advisory tool, as the continuous pattern of vegetation protection factor values allows the determination of the soil protection effect depending on the time of sowing, harvesting and the occurrence of hazardous rainfall according to the real conditions. Currently, the maximum soil loss in the Czech Republic is estimated at approximately 21 million tonnes of topsoil annually, which can be expressed as a loss of at least 170 million EUR per year. It should be stressed that this is not a quantification of property damage, but only a financial expression of soil loss based on the price of the soil. If these costs are also included, the damage is estimated to be up to 400 million EUR per year (Ministry of Agriculture). Therefore, reducing erosion damage leads to significant savings.

Stone Prague. Stoneworking of Historical Buildings of the Capital City of Prague.
The publication, covering almost 680 pages, presents unique results of fifteen years of research on the stone surface working in the historical area of Prague. It captures the thousand-year history of the development of the stonemason craft and puts it in the worldwide development context. The monograph was written by 14 experts in various fields, ranging from technical and natural sciences to historical sciences, which makes the publication unique. Besides the identification of the tool traces on about 600 stone blocks and artifacts made of it, the stonemason's tools used have been identified on the basis of traceological analysis and the working procedure has been described for each of them. All the results obtained about the tools used and the individual working stages are illustrated. Each stone element has its own unique detailed card describing its location in the object and how it was created. In the text part of the book, the individual historical objects are briefly introduced by describing their construction and historical development, and each stone element is characterized in terms of material composition, with an indication of its current state. It also documents the available sources of building stone in a given historical period. Traces of historic working methods are an integral part of the value of any monument, evidencing the story of its origin. This publication is therefore a unique tool for workers of monument care, from building historians to restorers, who can use it routinely in their practice. At the same time, the book is also enriching in its content for the general reader, as it presents aspects that an ordinary person misses when visiting monuments and brings a new perspective on their perception, 2022 (https://www.researchgate.net/publication/369998112_Praha_kamenna_Kamenicke_opracovani_historickych_staveb_Hlavniho_mesta_Prahy).

Table 3.4.1 - Overview of research results in the period under evaluation

Type of result[30]	Year of application	Name
Book	2022	VLTAVA Changes in the Historical Landscape (VLTAVA proměny historické krajiny), ISBN 978-80-01-07084-0.

[30] Specify the specific type of result. Add rows as needed.

Design guide	2021	European Design Guide for the Use of Weathering Steel in Bridge Construction, Brussels: ECCS European Convention for Constructional Steelwork, ISBN 978-92-9147-171-3.
Software	2020	Czech historical atlas (https://cha.fsv.cvut.cz/en/)
Approved Methodology	2020	Methodology for the evaluation and protection of buildings from the second half of the 20th century (with a focus on the architectural heritage of the 1960s and 1970s) with regard to their (possible) monument protection.
Book	2019	Benchmark cases for advanced design of structural steel connections - Third extended edition, Prague, CTU Publishing House, ISBN 978-80-01-06565-5.
Software	2019-2023	Open-source, multi-physics, parallel finite element code OOFEM (www.oofem.org).
Heritage procedure	2022	Heritage procedure for diagnostics, inspection and assessment, renovation and strengthening of industrial heritage bridges
Data standard	2021	Regulation for Building Information Modeling (BIM) for transport infrastructure - Data standard
Certified methodology	2021	Certified methodology for protecting soil from erosion through climate- and environmentally-friendly agricultural practices.
Book	2022	Stone Prague. Stoneworking of Historical Buildings of the Capital City of Prague.

Note 1: Please list and describe the results already applied in practice or heading towards application in practice with existing or prospective impact on the society (e.g. domestic or foreign patents, sold licenses, spin-offs, prototypes, varieties and breeds, methodologies, significant analyses, surveys, expert outputs for policymaking or other forms of non-publication outputs, etc.). Indirect results of research, development and creative activities with documented societal impact, e.g. expert activities, services to the public/government/scientific community, may also be reported.

TRANSFER OF RESULTS INTO PRACTICE

3.5 Transfer of results into practice

The evaluated unit shall briefly describe its system for transferring results into practice. It shall also indicate up to five of the most typical users of its results, whether in the university environment or in the non-university application/corporate sphere, detailing how it collaborates with them and how it seeks out new users (using a maximum of five specific examples).

It will also indicate whether and how it commercialises R&D&I results (e.g. selling licences, setting up start-up or spin-off companies, etc.)[31], providing brief description of the commercialisation methods used. The effectiveness of the transfer of results and the commercialisation of R&D&I results will be described using a selection of results (max. five) listed in annex table (Table 3.4.1).[32]

Additionally, the evaluated unit shall briefly comment on the funds received during the period of 2019–2023 from non-public, non-grant sources (e.g. licences sold, spin-off revenues, donations, etc.). A full summary shall be provided in annex table (Table 3.5.1).

Maximum 500 words plus 200 words for each provided example of finding a new user of results and commercialization.

Self-assessment:

The faculty has a well-structured system for technology transfer. This system combines services provided at the university level with local services to support the transfer of knowledge and scientific results into practical applications. Here are some key components:

- The University Centre for Technology Transfer provides specialized services and support in the realm of Intellectual Property (IP) and its commercialization. It assists with IP management, protection, and application both within the Czech Republic and internationally.
- The InQbay Incubator offers a range of services to support startups and spin-off companies, including Legal, Accounting, Marketing and Consultation services.
- Faculty Services include an Advisory Board for Commercialization that assists with business and legal aspects, a patent search service, and a dedicated technology transfer support office.
- The Motivation System encourages and recognizes authors of successful technology transfers.

FCE has fostered enduring collaborations and partnerships with various sectors, including major construction firms, national organizations, and small to medium-sized enterprises. The unit actively engages in and hosts numerous networking events and platforms to identify industry needs and provide tailored solutions. Through these efforts, in addition to personal connections, the comprehensive multidisciplinary expertise and resources offered by FCE and CTU play a pivotal role in the acquisition of new clientele. These partnerships often commence with joint research projects that deliver applied outcomes aligned with client requirements. Typical beneficiaries of FCE's work include construction companies of all scales (via licensing) as well as national and municipal authorities (through methodologies, standards, etc.).

A common scenario involves outcomes stemming from collaborative projects with industrial partners. These joint results are then utilized by the industrial partner, generating future license fees. However, FCE possesses numerous results with commercial potential, which are not yet at a sufficient Technology Readiness Level (TRL) for direct commercial application. To bridge this gap, additional effort and funding are required, which FCE finds challenging to support through its own resources. Additionally, there is a shortage of companies or institutes that can serve as a bridge between academia and industry to facilitate this transition.

The most substantial contributions (gifts) within a reporting period have been provided by industrial partners such as Hochtief CZ (59k EUR) for student activities, competitions, support for gifted students, and teaching room equipment. Metrostav, a.s. (53k EUR) supports science and education, while VINCI Construction CS, a.s. (22k EUR) also contributes to student activities, competitions, support for gifted students, and teaching room equipment. Syner s.r.o. (16k EUR) supports student activities and competitions.

Selected examples of successful commercialization of R&D&I results include

[31] In the case of military HEIs, their specific position is taken into account when evaluating the commercialisation/evaluation of R&D&I results.
[32] If the commercialisation of R&D&I results is carried out in this way.

- License “Hybrid beam made of glass and steel”, sold to OGB, s.r.o. (8k EUR),
- Research and development of a “Mobile protective and ballistic barrier consisting of a composite plate and water filling” for STRIX Chomutov (6.1k EUR),
- License “Multifunctional high-value cementitious composite with increased impact resistance” sold to Stachema CZ (4.0k EUR),
- License “Ultra-high strength fiber concrete” sold to JEAN PAUL WHITECASTLE, spol. s r.o. (2.9k EUR).

The Faculty is registered expert institution providing expert assessment in the following fields: Civil Engineering, Geodesy and Cartography, Economics, and Design. The Faculty has been a long-standing member of the Chamber of Court Experts of the Czech Republic.
Through this membership, the Faculty is part of the multinational organization EuroExpert (https://euroexpert.org/), which brings together more than 50,000 forensic specialists, experts, and professionals from the EU. During the evaluation period, the GEOSAN Group represented the main client, both in terms of frequency and volume of assignments.

Additionally, the FCE **Accredited Testing Laboratory** provides a wide range of accredited commercial testing services. The most important client for the laboratory in the period in question is the Road and Motorway Directorate. The laboratory carried out a number of evaluations during the period, both on structures (bridges, tunnels, retaining and frame walls) and materials (concretes, asphalt mixtures, ashes, aggregates, soils).

Table 3.5.1 - Summary of non-public revenues received during the period under evaluation

Type of revenue	Revenue (in thousands CZK/EUR)				
	2019	2020	2021	2022	2023
Gifts	1261/49744	314/12387	411/16213	1041/41065	1141/45009
Licences sold	151/5957	70/2761	121/4773	38/1499	40/1578
Accredited Testing Laboratory	6445/254240	7866/310296	7893/311360	6572/259250	8251/325483
Expert Assessments	1440/56805	5525/217949	2861/112860	1493/58895	8350/329388
Total	9297/366745	13775/543392	11286/445207	9144/360710	17782/701460

Note: Enter funds raised for R&D&I from non-public sources besides grants or contract research (e.g. licences sold, spin-off company revenues, donations, etc.) in the calendar year.

POPULARIZATION OF VAVAI

3.6 The most important activities in the field of popularization of R&D&I and communication with the public

The evaluated unit shall briefly describe its main activities related to the popularisation of R&D&I and communication with the public (e.g. popularisation lectures, citizen science initiatives, etc.) during the period of 2019–2023 and provide up to 10 examples that it considers the most significant.

Maximum 500 words plus 200 words for each example given.

Self-assessment:

FCE is dedicated to popularizing, disseminating, and communicating knowledge in the field of civil engineering. Popularization and Dissemination Activities include Public Seminars and Workshops, where FCE regularly organizes public seminars and workshops that focus on various civil engineering topics. These events provide opportunities for the public to learn about the latest advancements, research, and best practices in the field. The faculty hosts popularization events, such as open days and public lectures, aimed at increasing awareness and interest in civil engineering among the general public.
FCE also actively participates in large-scale public events, such as science festivals and exhibitions. These events allow faculty to showcase its research, projects, and innovations to a broader audience.
FCE actively cooperates with secondary schools to promote civil engineering education and FCE competencies. This cooperation includes organizing educational programs, workshops, and lectures for students. FCE is a partner school of the Secondary school of Civil Engineering in Dušní Street in Prague.

FCE engages in the University of the Third Age (U3V), offering courses and activities for senior citizens who are interested in continuing their education. These programs cover various civil engineering topics and aim to make lifelong learning accessible to older adults.
FCE actively engages with the media to disseminate information about its research, projects, and events. This includes the posting of press releases, conducting interviews, and working in collaboration with journalists to ensure that the public is informed about the latest developments in civil engineering.

Selected examples of the popularization of R&D&I and communication with the public:

- Hall of the Year – FCE has been organizing this competition since 1986. The task of competitors is to design and produce a model of the building structure according to a specific assignment and to subject it to a load test. Since 2007, high school students have also competed in the special Junior category, and since 2023, the international Advanced category for doctoral students has been opened. The competition is supported by many industrial partners, including Hochtief, Wienerberger, Saint-Gobain, Gemo, Syner, and the Directorate of Roads and Highways. (https://halarokuakademik.fsv.cvut.cz/en/).
- Inspireli Awards – FCE is a founding member and active organizer of Inspireli Awards competition, the world's largest global student contest in Architecture, Urban Design and Landscape, and Interior Design, with participants from more than 40 countries (https://www.inspireli.com/en/).
- FCE Technical Thursdays – regular, open events for the public, students, professionals to meet over unique projects, implementations and technologies with invited guests. The recordings are also available online on YouTube and Facebook.
- FCE Participation in Children's University - The aim of this project is to arouse children's interest in technical fields. Children will have the opportunity to experience the university way of education and get acquainted with various technical fields in an engaging way. We believe that the activities within the university will motivate children to take further interest in STEM subjects and later to pursue university education in this area.
- FCE annual participation in World Water Day – targeted at the professional public, offering presentations of FCE researchers dealing with water about their projects and results, and providing guided tours of FCE unique facilities and running experiments at FCE Water Management Experimental Centre (https://www.fsv.cvut.cz/den-vody-na-fakulte-stavebni-cvut-2024/).
- National Construction Centre (NSC 4.0) - plays a key role in bringing the latest technologies in the construction industry closer to the general public and professionals. With its emphasis on digitization, sustainability and automation, it helps popularize modern construction technologies such as BIM modeling, 3D printing in construction and the use of artificial intelligence. NSC connects academia with industry, supporting the transfer of innovations to the real environment. In terms of communication with the general public, NSC 4.0 has many activities for the general public, such as Building Literacy, influence awareness of modern construction through public presentations, conferences or media coverage of research results. FCE is a founding member of this platform (https://www.ncs40.cz/).
- GISDAY - As part of the annual Global GIS Day, FCE is organizing a series of lectures and presentations on GIS applications in diverse fields with an informal atmosphere, open to the general and professional public (https://www.fsv.cvut.cz/gisday-2024/).
- FCE Gallery, founded in 2018 and accessible to the general public, is located in the central area of the faculty, where students, teachers and visitors to the faculty pass. The gallery's program includes exhibitions from various art disciplines, art photography, architecture and design. Exhibitions of professional artists alternate with exhibitions of talented young authors, and students of the faculty also find opportunities here. The gallery thus contributes to the education of young technical experts into personalities with a broad general and cultural outlook, but at the same time welcomes all other fans and lovers of architecture and art. A total of 31 public exhibitions took part in the evaluation period (https://galerie.fsv.cvut.cz/).

IMPLEMENTATION OF RECOMMENDATIONS

3.7 Implementation of the recommendations in Module 3

The evaluated unit will briefly describe how it has implemented the recommendations for Module 3 from the previous evaluation period, if applicable.

Maximum 1000 words.

Self-assessment:

Recommendation: A greater percentage of high-level research projects, funded e.g. by the ERC, would be beneficial to the international reputation of the Faculty of Civil Engineering. It is recommended to reduce the number of small industrial projects. At the same time, efforts should be made to attract larger projects. This would give more freedom to stimulate more research-oriented activities. It is also recommended to increase the percentage of revenues from EU-funded projects. The level of this percentage is frequently used as an indicator of the quality of research.

Since the last evaluation, FCE has significantly increased its involvement in EU and other international research projects. The number of projects with FCE as a beneficiary has risen from 6 to 22, while its role as a participant has risen from 13 to 37. This growth has led to a significant increase in international project funding, from 2.74M EUR in the previous reporting period to 51.86M EUR in the current period (as a sum of the relevant records in Tables), which represents an almost 19-fold increase.

A key achievement during the current period was the FCE's transition to a coordinating role for larger projects. While no EU research projects were coordinated in the previous evaluation period, FCE has since coordinated two H2020 projects (Geo-harmonizer and RECONMATIC). In addition, one ERC Starting proposal progressed to the second evaluation round and, after receiving a final score of "B," secured two years of equivalent national funding through the ERC.cz scheme.

In direct response to the recommendations of the previous evaluation committee, FCE has adopted three strategic incentives to attract more high-level projects:

- *Personalized grant support*: Since 2022, FCE has provided an individual, long-term mentoring program to help researchers prepare competitive project proposals. As of 2024, this initiative has already helped early-career researchers secure 1.5M EUR in funding.
- *"What will my next project be about?" initiative*: Launched in 2023, this program offers weekly informal meetings to foster the development of research ideas and to refine existing proposals. Initially a faculty-level activity of FCE, it has now been extended to the entire CTU.
- *FCE initiation fund*: This funding scheme directly supports young researchers in preparing high-impact project proposals by covering personnel costs, grant preparation services, and networking with internationally recognized researchers.

Through these focused initiatives, FCE has broadened its funding sources and enhanced its competitiveness for highly selective local and global grants.

Recommendation: Starting already from a high level, the output would further increase in the coming years if the research profile was further sharpened by defining clear research foci. A necessary condition for this is a close link to industry, including fundamental research activities, serving as the basis for future application-oriented research.

The FCE's strategic plan outlines the faculty's key research directions, as detailed in Section 3.1, in a top-down manner. These directions are strategically aligned with national priorities and address the evolving needs of industrial partners, ensuring a strong connection between fundamental research and application-driven innovation.

At the same time, FCE cultivates a dynamic bottom-up research culture to encourage the development of independent and emerging research topics. This goal is primarily supported by the above-mentioned targeted initiatives for early-stage researchers and young scientists, allowing them to explore transformative research ideas that could serve as the basis for future industry-driven applications.

Recommendation: The revenues from licences increased by a factor of about 2. The overwhelming majority of revenues from non-public sources in the period 2014-2018 comes from gifts. Altogether, these revenues are not very significant. Efforts are required to improve this situation. The output of filed and granted patents in the reported time period is very good. However, no spin-offs were launched in this time period. Moreover, the amount of revenues from sold licences is not known. It is recommended to develop a strategy for stimulating spin-offs from applied research activities.

Since the last reporting period, CTU has established a Technology Transfer Unit (TTU) to enhance support for commercialization, industrial cooperation, and spin-off development. While CTU has one registered spin-off (Mob-bars, s.r.o., 2016) operated by FCE staff, no additional spin-offs have been launched since 2016. However, CTU is now providing targeted consultancy and support services, which are expected to improve this situation in the upcoming evaluation period.

Regarding technology transfer income, FCE's income from sold licenses rose from 6.8k EUR to 16.5k EUR. However, absolute revenues remain modest, and further efforts are required to scale up licensing activities. A key obstacle is the absence of intermediary institutions or industry partners that can bridge academia and commercial applications.

To partially address these challenges, the CTU has established an incentive system for researchers contributing to successful technology transfers.

Recommendation: The better the quality of the research carried out by the evaluated research unit, the greater the probability of an increase in acknowledgments. In connection with this, personal acquaintances, made at international congresses and conferences, play a great role. The average duration of doctoral studies should be reduced. The same should be done with the involvement of researchers in administrative activities.

To enhance the efficiency of doctoral studies, the CTU has internally set the maximum duration to six years, as a reduction of the national limit of seven years. Additionally, FCE has incentivized PhD supervisors whose students finish their studies in four years or less, to promote the timely completion of Ph.D. training.

FCE actively supports international networking to increase research visibility, foster collaborations, and enhance recognition. During the reporting period, FCE co-organized and participated in numerous international events, for instance:

- Six major international conferences, including the iiSBE Forum of Young Researchers in Sustainable Building (2019) and the IABSE Symposium Prague (2022).
- 16 national conferences and workshops, fostering collaboration between the academic and industrial communities.
- 10 additional international events, further strengthening global research connections.

FCE established the Project Administration and Support Department in 2022 to reduce the administrative burden on researchers. This department provides comprehensive project management support, covering proposal preparation up to sustainability phases. It manages more than 45 projects, including 13 international projects (8 Horizon Europe and 5 other international projects) and large national-scale research initiatives.

A LIST OF SUPPORTING DOCUMENTS/LINKS FOR MODULE 3

Document name	No. criteria	Location (link in HTML)
Bibliometrical Report, Research, Development and Innovation Council	3.1	https://hodnoceni.rvvi.cz/hodnoceni2023/biblio-obory
QS World University Ranking by Subject 2025	3.1	https://www.topuniversities.com/subject-rankings
International Society for Soil Mechanics and Geotechnical Engineering	3.2	https://www.issmge.org/
International Society for Photogrametry and Remote Sensing	3.2	www.isprs.org
IABSE Symposium Prague	3.2	https://www.iabse.org/prague2022
iiSBE Forum of Young Researchers in Sustainable Building	3.2	https://cesb.cz/yrsb/
Central Europe towards Sustainable Building 2019	3.2	https://19.cesb.cz/

International Conference on Local Mechanical Properties 2019	3.2	http://lmp-conference.cz/
International Conference on Lightweight Structures Architecture	3.2	https://alk--20.wixsite.com/alk20?lang=en
largest creep and shrinkage database for structural concrete	3.2	https://doi.org/10.5281/zenodo.8150176
Civil Engineering Journal	3.2	https://lfgm.fsv.cvut.cz/CivilEngineeringJournal/index.html
TAČR Award 2023 in the BUSINESS category	3.2.1	https://tacr.gov.cz/den-ta-cr-2023-veda-neni-sci-fi/
International Soil and Water Conservation Research	3.2.2	https://www.keaipublishing.com/en/journals/international-soil-and-water-conservation-research/editorial-board/
Cement and Concrete Research	3.2.2	https://www.sciencedirect.com/journal/cement-and-concrete-research/about/editorial-board
Cement and Concrete Composites	3.2.2	https://www.sciencedirect.com/journal/cement-and-concrete-composites/about/editorial-board
ISPRS Journal of Photogrammetry and Remote Sensing	3.2.2	https://www.isprs.org/news/newsletter/default.aspx
Energy & Buildings	3.2.2	https://www.sciencedirect.com/journal/energy-and-buildings/about/editorial-board
Advances in Engineering Software	3.2.2	https://www.sciencedirect.com/journal/advances-in-engineering-software/about/editorial-board
Journal of Constructional Steel Research	3.2.2	https://www.sciencedirect.com/journal/journal-of-constructional-steel-research/about/editorial-board
Journal of Hydrology and Hydromechanics	3.2.2	http://www.uh.sav.sk/jhh/Journal-information/Associate-Editors
Computers & Structures	3.2.2	https://www.sciencedirect.com/journal/computers-and-structures/about/editorial-board
Acta Mechanica	3.2.2	https://link.springer.com/journal/707/editorial-board
Geo-harmonizer project	3.3	https://ecodatacube.eu/
Roboprox project	3.3	https://roboprox.eu/
the Open Mechanics Group	3.3	https://openmechanics.fsv.cvut.cz
RECONMATIC project	3.3	https://www.reconmatic.eu/about
Autonomous Robotic Construction System demo	3.3	https://www.youtube.com/watch?v=4XmYAPAaf2M
Czech historical atlas, Software, 2020.	3.4	https://cha.fsv.cvut.cz
Map of the Year prize in the Digital Cartographic Products category by the Czech Cartographic Society	3.4	https://geomatics.fsv.cvut.cz/en/cesky-historicky-atlas-ziskal-titul-mapa-roku-2020/
OOFEM: open source FE solver	3.4	**www.oofem.org**

Rules of Procedure and the Certified Code	3.4	https://sfdi.gov.cz/bim/
Stone Prague. Stoneworking of Historical Buildings of the Capital City of Prague.	3.4	https://www.researchgate.net/publication/369998112_Praha_kamenna_Kamenicke_opracovani_historickych_staveb_Hlavniho_mesta_Prahy
Czech historical atlas	3.4.1	https://cha.fsv.cvut.cz/en/
OOFEM software	3.4.1	www.oofem.org
Euroexpert	3.5	https://euroexpert.org/
Hall of the year competition	3.6	https://halarokuakademik.fsv.cvut.cz/en/
Inspireli award	3.6	https://www.inspireli.com/en/
World Water Day	3.6	https://www.fsv.cvut.cz/den-vody-na-fakulte-stavebni-cvut-2024/
National Construction Centre	3.6	https://www.ncs40.cz/
GIS days	3.6	https://www.fsv.cvut.cz/gisday-2024/
FCE gallery	3.6	https://galerie.fsv.cvut.cz/
Personalized grant support	3.7	https://portal.fsv.cvut.cz/en/vvc/pp.php
"What will my next project be about?" initiative	3.7	https://roboprox.eu/news/seminar-what-will-my-next-project-be-about/
FCE initiation fund	3.7	https://portal.fsv.cvut.cz/vvc/projekty/inicfond.php