A REPORT FROM THE SWEDISH FEDERATION OF CONSULTING ENGINEERS AND ARCHITECTS

DECEMBER 2018

SECTOR REVIEW

"STRONG SECTOR UNDERGOING CHANGE FROM GLOBALISATION AND DIGITALISATION

A Swedish, Nordic and International Survey of The Consulting Engineering and Architectural Groups

Svenska Teknik & Designföretagen

almega

KEY FIGURES 2017 (2016)

86 billion — The sector turnover in Sweden was SEK 86 billion (SEK 73.7 billion)

8 percent — The increase in turnover was 8 % compared with 2016[1]

17.4 billion — Swedish groups had sales amounting to SEK 17.4 billion in subsidiaries abroad (SEK 16.9 billion)

66 200 employees — The sector had a total of 66 200 employees in Sweden (60 500)

5 percent — Personnel growth was 5 % compared with 2016[2]

16 000 employees — Swedish groups had 16 000 employees in subsidiaries abroad (15 800)

12000 companies — The sector consisted of some 12 000 companies in Sweden (11 000)

SEK **1,300k** — The turnover per employee was SEK 1 300 000 (SEK 1 218 000)

7.4 percent — The average operating margin was 7.4 % (7.2 %)

7.1 percent — The average profit margin was 7.1 % (7.2 %)

4.7 percent — The average net margin was 4.7 % (5.1 %)

[1] In this year's review, companies that together have a turnover of over SEK 6.4 billion have been added to the survey. As a consequence, the real growth rate is 8 % and not 17 %.
[2] In his year's review, companies that together employ 2 700 personnel have been added to the survey. As a consequence, the real growth rate is 5 % and not 9 %.

THE SECTOR REVIEW

The Sector Review has been published by the Swedish Federation of Consulting Engineers and Architects (STD-företagen) since 1995. It is a compilation of the architectural, engineering consultancy and industrial consultancy sectors in Sweden, the Nordic countries and Europe. The Review presents ranking lists of the largest corporate groups on the respective markets, interesting key business ratios, news about structural transactions and information on the development and economy within the sector over the past year.

Since 2005, STD-företagen's counterparts in the neighbouring Nordic countries have contributed to the Review. The organisations that participate in this cooperation are FRI in Denmark, RIF and Arkitektbedriftene (Architects' association) in Norway, SKOL in Finland and FRV and SAMARK (Architectural association) in Iceland.

The figures in the Review are based on the latest available data that we have been able to find on the respective firms. For just over half the firms the review is equivalent to a calendar closing for 2017. The remaining firms have split financial years. In most cases, we have received their annual reports for 2017/18. However, some annual accounts were not ready when work on the collection of basic data came to an end, for example for those companies whose annual accounts close at the end of August. In these cases, we have retained the same figures as for 2016/17. For the sake of simplicity, we refer to the compiled figures that applied for 2017.

The corporate information in the Review has been acquired via the databases Soliditet (Sweden) and Factiva Dow Jones Companies & Executives (Europe), from the Nordic organisations, direct from companies or via the companies' home pages. The monitoring covers some 2,000 companies in Sweden, the Nordic Area and Europe. Collecting the information is an extensive and time-consuming task, and in some cases it is impossible to obtain reliable information. The information on the international companies is more difficult to access. In Sweden, annual reports are public documents. This is not the case in all countries, and many firms are reluctant to disclose their figures. In these cases, we use the most recent material we can find. Consequently, all companies that appear in – or should appear in – the Review are requested to contact STD-företagen and to submit their details in order to make sure that the information published on them is correct.

We would like to thank those companies that have helped us by submitting their annual reports or figures!

We would especially like to thank Mikael Vatn (Etteplan Sweden), Kaj Möller (Sweco International), Johanna Frelin (Tengbom), Mickey Johansson (WSP), Tore Strandgård (Incoord), Gert Wingårdh (Wingårdhs), Tryggvi Jónsson (Mannvit), Siri Bakken (Oslo Works & NTNU), Øyvind Mork (Asplan Viak), Ib Enevoldsen (Ramboll Denmark) och Jyrki Keinänen (AInsinöörit) for their contributions to the report through the interviews!

DAVID CRAMÉR
MARKET ANALYST
SVENSKA TEKNIK&DESIGNFÖRETAGEN
DAVID.CRAMER@STD.SE
+46 8 762 67 02

ABOUT SVENSKA TEKNIK&DESIGN-FÖRETAGEN

The Swedish Federation of Consulting Engineers and Architects (STD-företagen) is an employer and sector-oriented organisation that represents the interests of innovative companies in the knowledge-intensive service sector. It is our task to create the preconditions necessary for a world-leading architectural and engineering sector.

The Swedish Federation of Consulting Engineers and Architects was founded in 1910 so we have a long history of driving change through innovative design work that is developed into cutting-edge solutions. We represent the interests of 765 member firms that together have some 37 000 employees, which is two thirds of the sector's total personnel force. We are part of Almega, which is Sweden's leading organisation for service firms and the largest association within Svenskt Näringsliv (Confederation of Swedish Enterprise). Almega organises the activities of over 10 700 member firms in some 60 different sectors.

We offer service and advice in employer and sector-related matters. We focus on a number of important key areas in order to create the conditions necessary for our member firms to function both as professional partners and as employers.

MAGNUS HÖIJ
MANAGING DIRECTOR
SVENSKA TEKNIK& DESIGNFÖRETAGEN

DAVID CRAMÉR
MARKET ANALYST
SVENSKA TEKNIK& DESIGNFÖRETAGEN

MIKAEL VATN
CEO ETTEPLAN SWEDEN AND CHAIRMAN OF SVENSKA TEKNIK& DESIGNFÖRETAGEN

Cover photo: New Beacons; the winning bid for the design of stations and towers in the new Gothenburg city-funicular. Produced by UNStudio and Kjellgren Kaminsky Architecture.

Picture: UNStudio.

Swedish Federation of Consulting Engineers and Architects (Svenska Teknik&Designföretagen) in cooperation with Pär Ek Grafisk Form (Graphic design).

Printing: Brandfactory Stockholm 2018

Translations: JNG Ainscough HB

CONTENTS

A DESIRED CHANGE AT THE RIGHT TIME

At present, our sector is undergoing a long series of changes. Companies are being acquired. The market is being consolidated. Companies are being professionalised. Globalisation is becoming increasingly evident. They say that change should preferably be made from a position of strength, and not from one of weakness. Currently, the companies within Svenska Teknik&Designföretagen (the Swedish Federation of Consulting Engineers and Architects) – often advisory engineering and architectural firms – have a very strong position on the market. It has been a very good economic situation for housing construction, for the infrastructure and for the needs of industry for smart services and development support. Therefore, the changes in our sector are taking place at a time when we can go from an already strong position and make companies even stronger in both national and international competition.

It is also claimed that changes should be made because you want to, and not because you have to.

Frequently, companies or sectors are forced to make changes as a result of deteriorating markets, shifts in technology or other developments in the world around us. In our case it is a combination of curiosity, insight and new demands on the part of clients that have made it possible for our companies to develop.

When our member firms seek beyond their natural habitat it is in the secure knowledge that we do not abandon anything – we grow. There is no shortage of challenges, either at corporate level or in the structures that a member association is concerned with.

But our sector is helping itself, just at the right time. And with the right driving force.

MAGNUS HÖIJ
MANAGING DIRECTOR, SVENSKA TEKNIK&DESIGNFÖRETAGEN

FIVE CURRENT TRENDS

1

INNOVATION

There is a growing need for new solutions in all areas. This is true with regard to building, urban and rural planning and to the business sector in general. And to an ever growing extent, companies and organisations need help with their innovation processes and in discovering these innovative solutions. Engineering and architectural firms have always offered smart and innovative solutions, but now the level of interest being shown is substantial and it is frequently a fundamental feature of the supply, in both large and small projects.

2

ARTIFICIAL INTELLIGENCE

There is no doubt whatsoever that artificial intelligence, AI, is becoming increasingly capable and has the capacity to do more. Things that we once considered impossible for a machine to do are nowadays carried out by IBM's or Google's machines without problems – in fact often better than by a human-being. We know very little about how the early, creative stages are affected by the artificial intelligence: the journey has just begun. But a growing number of evaluators are of the opinion that it will have a major impact. And it will redraw the map of who does what and how.

3

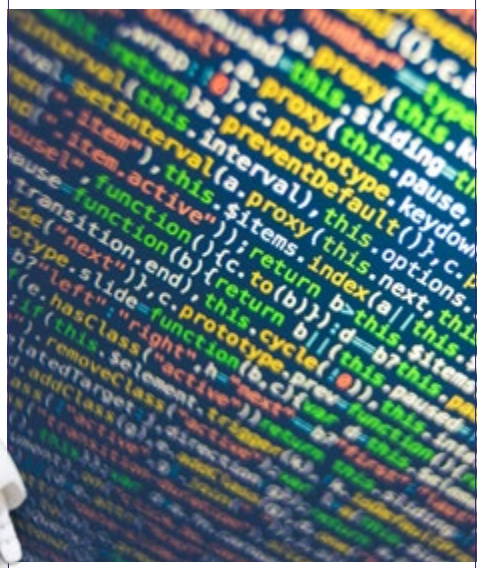
ROBOTISATION

In parallel with the advances that are being made in AI, the same kind of rapid development is also being experienced in robot technology. The use of robots in our factories has for many years been common practice; now it is playing an even greater role in the construction process. Robots that install stonework, robots that build walls and 3D-printers that eject shotcrete. Butt 3D-printers are also becoming important in connection with design activities – in both small series as well as in prototypes. There is no doubt that design work and planning will be affected fundamentally by the fact that work carried out previously by a human-being is now performed by a robot.

4

BIG DATA

Digitalisation changes many things. AI and robotisation are two consequences of digitalisation, but access to large quantities of data is another. The chance to analyse our physical environment –regardless of whether the object in question is a building, a bridge or a truck – increases when sensors and other data are collected in. It provides us with better opportunities to understand what should be developed and how. But the sensors and digital tools mean that it is also easier to maintain what we have already created.



5

SUSTAINABLE DEVELOPMENT

Environmental challenges are appearing on the scene more frequently, are increasingly demanding and are having an impact on a growing number of people. Companies possessing a large quantity of engineering and architectural know-how have for many years been the driving force in sustainability issues: it is precisely our members who have the knowledge necessary to solve these sustainability issues. But now we are experiencing a significant increase in the interest and demand being shown in sustainability, and more needs to be done. There is a growing need for extensive and innovative solutions.

THE SECTOR'S DEVELOPMENT IN 2017 AND 2018

2017 saw continued expansion in the engineering and industrial consultancy, and architecture sector in Sweden. 12 000 companies had turnovers of SEK 86 billion and 66 200 employees during 2017. This is equivalent to a growth rate of 8 %[3] measured in terms of turnover and 5 %[4] in the number of employees. The sector has experienced a period of record strong growth for several years that has also had an impact on profitability, which has improved. The average operating margin increased to 7.4 % in 2017, from 7.2 % during 2016, but the average profit margin dropped to 7.1 % from 7.2 % in 2016. The sales per employee increased to SEK 1 299 000 during 2017 from SEK 1 218 000 in 2016.

Companies in the sector

The sector is defined in this report as engineering consultancy firms operating in the fields of building, civil engineering and industry, and architectural firms. Also included in the coverage are a number of inspection and certification firms.

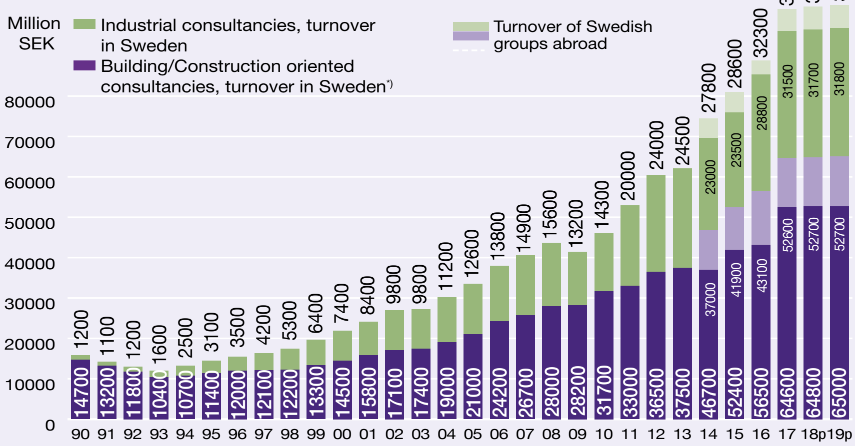
The sector consists of some 12 000 companies, 10 900 of which have from 0–2 employees, 20 have over 500 employees and 12 have more than 1 000 employees. The consolidation trend remains strong and means that the larger firms are becoming even larger and that the medium-sized firms are becoming fewer in number. The ten largest groups had 43 481 employees during 2017 compared with 40 051 in 2016. They have in other words grown by almost 4 500 employees in the space of a year.

Number of employees	Number of companies
501 –	19
101 – 500	50
51 – 100	51
21 – 50	175
11 – 20	240
3 – 10	1375
0 – 2	10090
	12000

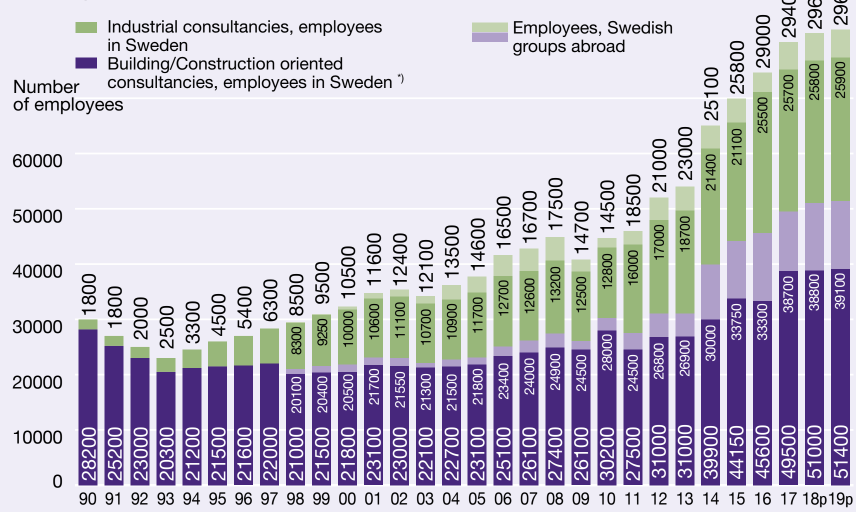
[3] In this year's review, companies that together have a turnover of over SEK 6.4 billion have been added to the survey. As a consequence, the real growth rate is 8 % and not 17 %.

[4] In this year's review, companies that together employ 2 700 personnel have been added to the survey. As a consequence, the real growth rate is 5 % and not 9 %.

Turnover in the Sector, MSEK



Average number of employees in the Sector



**) Of the building/construction-oriented consultancies architects represented 11 billion SEK in turnover and 9,000 employees in 2017. Certification and testing-oriented companies representing 2 billion SEK in turnover and 1,800 employees are not included in the numbers above.*

Source: Svenska Teknik&Designföretagen

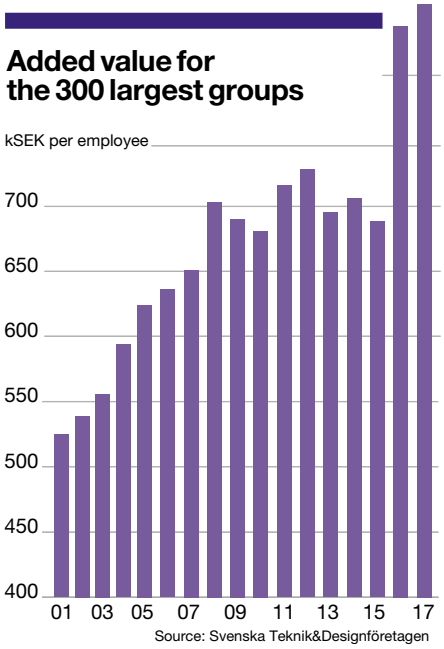
> THE SWEDISH INDUSTRY TURNED OVER 86 BILLION SEK AND EMPLOYED 66 200 STAFF IN 2017.

Key business ratios

The architectural, engineering consultancy and industrial consultancy sector in Sweden is continuing to grow. The total turnover increased to SEK 86 billion during 2017 from SEK 73.7 billion in 2016. The number of employees in the sector increased to 66 200 in 2017, from 60 500 the previous year. The number of companies that are included in the review has increased, which can explain part of the expansion. The actual growth was approximately SEK 6 billion and 3 000 employees, or 8% and 5% respectively. The subsidiaries of the Swedish groups abroad had a turnover of SEK17.4 billion and employed 16 000 personnel, compared with SEK 16.9 billion and 15 800 employees in 2016. Also included in the review are a number of inspection and certification firms. These had a total turnover of SEK 2 billion and 1800 employees during 2017. The average turnover per employee in the sector increased to SEK 1 299 000 from SEK 1 218 000 during 2016. With the foreign-based operations, the turnover per employee was SEK 1 264 000, up marginally from SEK 1187 the previous year.

The level of profitability was further strengthened somewhat in 2017. The operating margin (EBIT) increased to 7.4% from 7.2% during 2016. However, the operating margin before depreciation (EBITDA) was 9.2%, compared with 8.6% in 2016. The profit margin (result after financial items) was 7.1% in 2017, i.e. somewhat lower than the 7.2% registered in 2016. The net margin (the profit for the year after tax) also decreased – to 4.7% from 5.1% the previous year. But the operating margin is probably the

Added value for the 300 largest groups

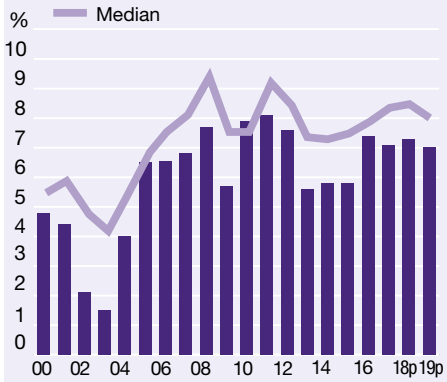


Source: Svenska Teknik&Designföretagen

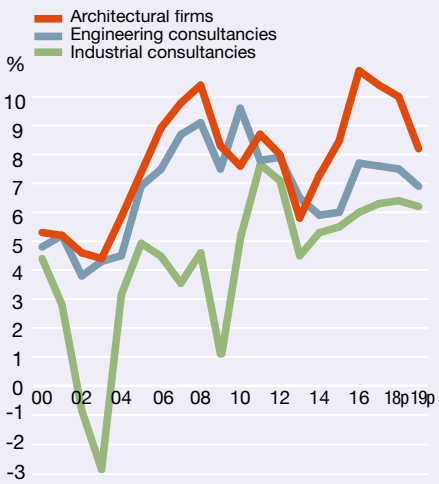
Development by sectors

	Turnover per employee, SEK thousand												Profit after financial items per employee, SEK thousand											
	08	09	10	11	12	13	14	15	16	17	18p	19p	08	09	10	11	12	13	14	15	16	17	18p	19p
The top 300 groups	1 037	1 017	1 065	1 130	1 161	1 150	1 165	1 182	1 230	1 302	1 297	1 291	78	46	85	92	88	64	67	69	91	94	95	87
Building construction oriented	1 102	1 086	1 125	1 150	1 171	1 194	1 181	1 213	1 286	1 354	1 348	1 341	101	81	104	92	92	76	71	77	106	107	108	96
of which																								
Architectural firms	1 063	1 098	1 099	1 132	1 158	1 214	1 159	1 177	1 264	1 283	1 271	1 259	110	87	84	98	92	63	84	100	138	133	127	103
Engineering consultancies	1 107	1 184	1 129	1 153	1 174	1 093	1 184	1 219	1 290	1 372	1 368	1 362	101	80	107	90	92	79	70	73	106	103	103	94
Industrial consultancies	949	964	954	1 099	1 148	1 093	1 143	1 136	1 153	1 237	1 234	1 229	44	-17	45	91	82	49	61	58	70	79	79	76

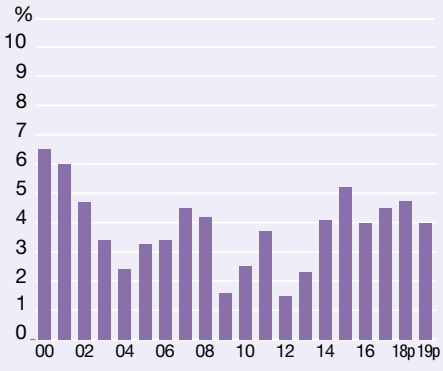
Profit margins in the top 300 groups



Profit margins



Change in payroll costs/employee



Source: Svenska Teknik&Designföretagen

> THE OPERATING MARGIN INCREASED TO 7.4 % IN 2017, FROM 7.2 % IN 2016.

business ratio that shows most accurately how profitability in the sector is developing. Many foreign-owned companies send group contributions to their parent companies, which has an impact on both the profit margin and the net margin for the Swedish sector.

It is anticipated that the profitability levels will be approximately the same for 2018 as they were for 2017, with certain variations. The profitability among architects is expected to decrease somewhat whereas the profitability of engineering consultants is expected to increase. For 2019, it is likely that profitability development in the sector will slow down and perhaps even decrease somewhat. Factors that support these expectations are a slowdown in the housing sector, a greater proportion of public sector clients and somewhat lower average fees.

Architectural firms

The architectural sector had a turnover of SEK 11 billion in Sweden in 2017, which is a significant upswing compared with the SEK 10.1 billion turnover in 2016. The number of employees increased to 9 000 compared to 8 200 during 2016. The turnover per employee was SEK 1 222 000 in 2017 compared to SEK 1 232 000 in 2016. Swedish architectural firms had a turnover of SEK 1 billion in foreign subsidiaries and some 800 employees. Profitability decreased somewhat during 2017. The profit margin decreased to 10.3 % from 10.9 % in 2016. However, the operating margin increased to 11.4 % in 2017 from 10.4 % the previous year.

Industrial consultancies

The industrial consultancy sector had a turnover of SEK 31.5 billion in Sweden during 2017, compared with SEK 28.8 billion in 2016. It had 25 700 employees compared with 25 500 the previous year. The turnover per employee increased to SEK 1 226 000 from SEK 1 129 000 in 2016. Swedish industrial consultants had a turnover of SEK 5.4 billion in foreign subsidiaries and 4 900 employees. Profitability increased in 2017. The profit margin increased to 6.3 % from 6.0 % during 2016. The operating margin increased to 6.6 % from 6.1 % the previous year.

Engineering consultancies

Engineering consultancies had a turnover of SEK 41.6 billion in 2017 and 29 700 employees compared with SEK 33 billion and 25 100 employees during 2016. However, a large proportion of this upswing is attributable to an increase in the amount of material reviewed in the processing of this report. Almost SEK 6 billion and 3 000 employees have been added to the survey material studied, so the growth was in reality approximately SEK 3 billion and barely 2 000 employees. The turnover per employee was SEK 1 400 000 in 2017 compared to SEK 1 315 000 during 2016. The profitability level was worse in 2017 compared with 2016. The profit margin was 7.3 % in 2017 compared with 7.7 % during 2016. The operating margin was 7.4 % in 2017 compared with 7.8 % during 2016.

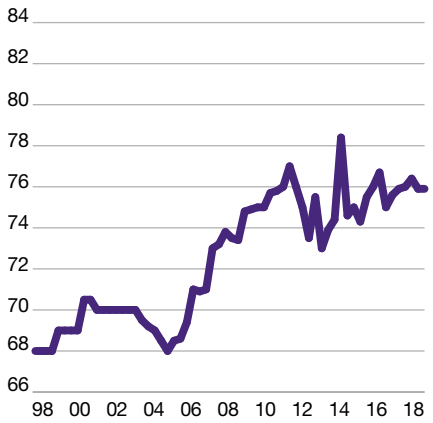
Investments in Sweden

	2017		2018 p	2019 p
	Billion SEK	%	%	%
Dwellings	260,5	12	-2	-9
Other premises	156,6	7	6	2
Industrial buildings	8,2	16	-6	4
Infrastructure and installations	86,7	0	6	4
Total construction oriented investments	**512,0**	**8**	**2**	**-3**
Investments by manufacturing industries in machines and tools, according to STD-företagen and Statistics Sweden	**58,2**	**3**	**-1**	**1**

Building and industrial investments in 2017 and forecasts for 2018 and 2019.

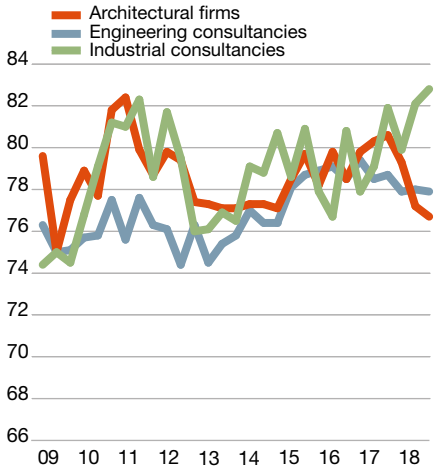
Source: Statistics Sweden and Swedish Construction Federation

Annual billing ratio

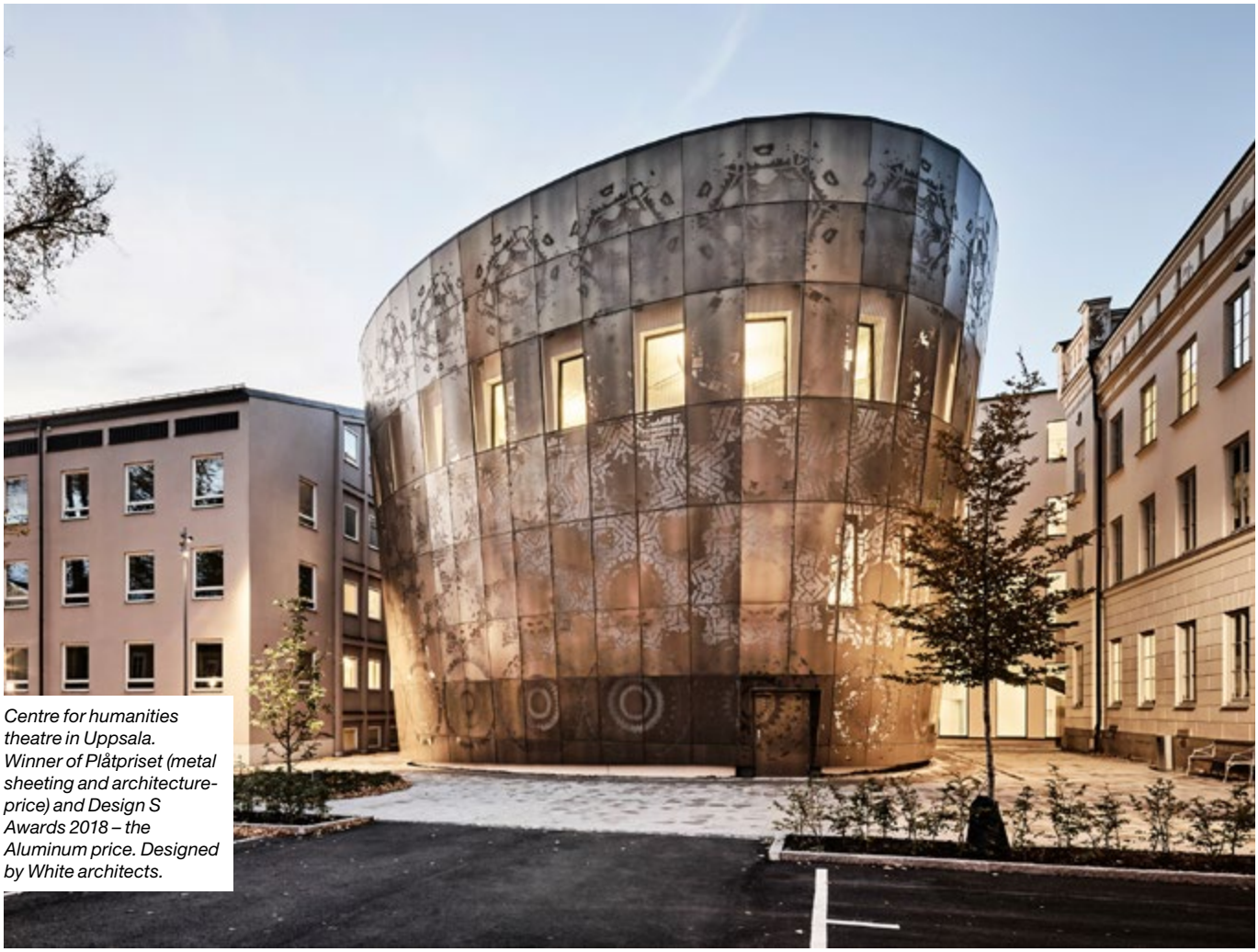


The billing level of the listed companies, weighted according to the size of the respective company.

Average billing ratio per sector



From member surveys for the report Investeringssignalen, weighted according to the size of the respective company.



Centre for humanities theatre in Uppsala. Winner of Plåtpriset (metal sheeting and architecture-price) and Design S Awards 2018 – the Aluminum price. Designed by White architects.

PHOTO: MÅNS BERG

Stenpiren travel centre, on the wharf of the new Gothenburg city district Skeppsbron by the river.

PHOTO: HENRIK FOGLKLOU

INTERVIEW
GERT WINGÅRDH
CEO, WINGÅRDHS

TECHNOLOGY ALLOWS **TIME FOR CREATIVITY!**

The rate of development in the housing sector has slowed down over the past year. How would you describe development at sector level, or in other words how much does it affect the overall economy of architectural firms?

Fluctuation in the housing sector is rapid, and in this context psychology has always played an important role. The fear of price decreases and runaway credit costs among housing developers is leading to caution. Stricter amortisation requirements are resulting, among other things, in tenant-owner projects that are being changed into rented apartment schemes, reduced prices for newly built housing properties and construction firms that are withdrawing their interest from housing projects and returning their land allocations.

We must, of course, follow up on what is happening in the market around us. We have noted, as everyone else, that the downswing in the housing sector is above all centred on the Greater Stockholm area. If at an architect's office there is a major emphasis on housing projects, it can have negative consequences for the number of job alternatives that are available. We can already see examples of this.

Housing, however, has never been Wingårdhs' largest sector. We have instead a wide range of projects that keep our offices occupied. It is a strategy that we have succeeded in maintaining over the years.

Gert Wingårdh, CEO Wingårdhs

The housing shortage has not been eliminated. What do you feel needs to be changed in connection with housing construction in order to stimulate investments again?

There is still a severe lack of housing. Boverket's assessment that a further 600 000 housing units are needed before 2025 will be difficult to live up to! A level that is currently considered to be more sustainable in the long term is approximately 55 000 apartments per year. In order to reach this level a number of measures will still need to be taken. The factor that is in general regarded within the sector as being the greatest threat to housing construction is today primarily the limited capacity among householders to finance their living arrangements, given the loan requirements that currently apply – especially in the case of single-occupant households. Sweden also has the EU's highest prices for housing construction and has headed the list since 2010.

I believe that a combination of measures is necessary and a general changeover/ supplementation of the sector to a structure with less expensive housing units. Local authorities have a responsibility to provide areas that have the conditions necessary to build housing at a reasonable price, and with a flexible planning process. Here we architects can assist both future proprietors and local authorities.

The consolidation trend has been in progress for many years now, and architects have been integrated with engineering consultants. What does this offer in terms of advantages and disadvantages?

It is not only the large engineering consultancies that integrate architects by means of acquisition. There are also large architect offices that extend their operations in the same way. Wingårdhs have always grown organically. We believe in recruiting from the younger ranks – often through a previous traineeship at the company and, following graduation, being slotted into the corporate culture. It is precisely corporate culture that I believe could prove to be a problem in connection with acquisition. What perhaps looks like a good deal on paper could require both many years and a lot of hard work before a successful integration is achieved.

The reason why engineering consultancies supplement their operations with architects is usually because they want to offer their clients a full-service undertaking. Many future proprietors do not at present have their own organisations that can manage the work of a large number of parallel consultants in a project. It can also be seen that the number of assignments incorporating a requested main consultant undertaking is on the increase.

What are the trends in the sector both now and in the future, let us say five years? Think in terms of corporate structure and size, and business models.

Greater mobility on all levels – customer, personnel and tools – that can result in greater cooperation between different areas of competence and individual experts.

Clients will demand greater insight and control – technical tools provide the opportunity to follow the work in detail and transparency will be an increasingly fundamental value. Technical development is continuously increasing the correctness or accuracy of information, and at the same time reducing the need for manual control (good or bad?).

Perhaps we, within our conservative industry, can find a better way of receiving payment for our services than on the basis of hourly rates?

Fewer clients turn their attention to full-service offices once they realise that they can solve certain parts of the process less expensively in other ways. The individual professional reputation of a consultant wins ground from a consulting company's brand name.

Technology allows time for creativity!

PHOTO: JACOB KARSTRÖM

Inspection and certification firms

Inspection and certification firms had a turnover of SEK 2 billion and 1 800 employees in 2017 compared with SEK 1.8 billion and 1 700 employees in 2016. This gives a turnover per employee of SEK 1 179 000, which is higher than the SEK 1 059 000 reported for 2016. Profitability improved in 2017. The profit margin was 3.0% compared with 1.4% in 2016 and the operating margin 3.6% during 2017 compared with 1.1% the year before.

Value added

The value added per employee remained in principle unchanged at SEK 855 000, compared with SEK 856 000 in 2016. The value added is equivalent to the increase in value that companies add in their production and is also referred to as the companies' contribution to GNP. In purely concrete terms it is a company's sales minus the costs of inputs. The calculations are made by adding together the company's payroll costs, operating profit and depreciations. Together these make up the value added. The value is then divided by the mean number of employees in order to arrive at the value added per employee.

Financial strength

The financial strength also remained more or less unchanged during 2017, i.e. 40% compared with 41% in 2016. Calculating the financial strength is the way in which we measure how a company's assets appear in relation to its debts. In this context we measure shareholders' equity against the total assets. A gen-

eral rule of thumb is that you should have a financial strength of over 30%. At the same time, it must not be too high. This would mean that the company's capital is inactive and is not generating any income. The financial strength of the companies in the sector is in general sound .

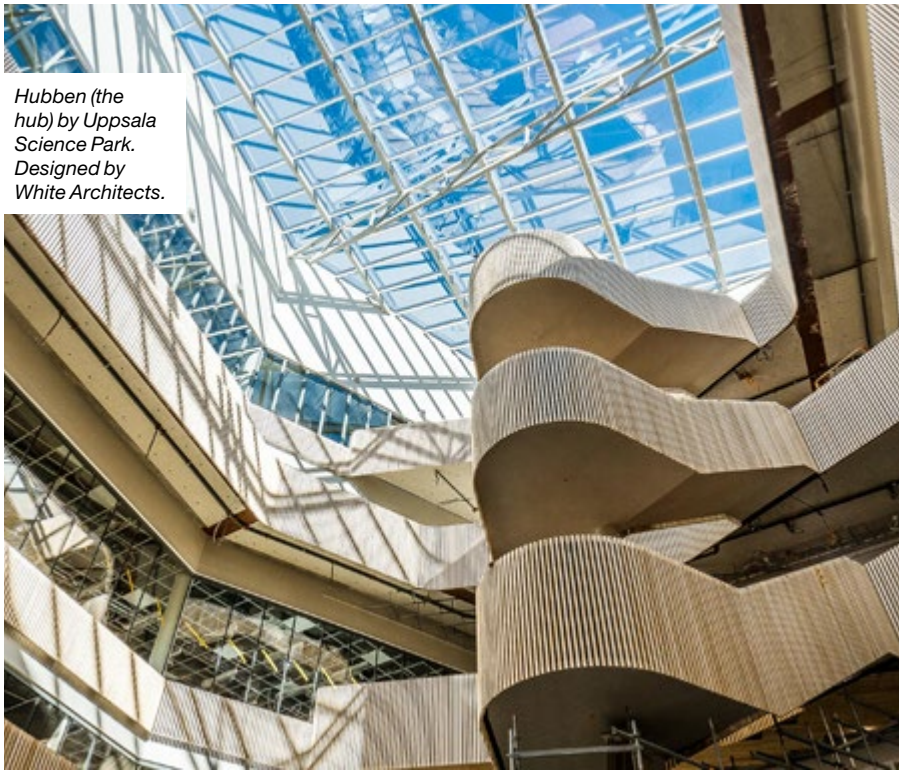
Payroll costs

The payroll costs per employee increased by 4.5% during 2017 compared with 4.0% in 2016 and 5.2% in 2015. The reason behind the substantial increase in payroll costs is the excellent order status during recent years in combination with a shortage of competence. The lack of available competence (or resources) has resulted in a growing demand for recruitments between companies that are spinning on the payroll cost spiral within the sector. The payroll costs have probably increased by between 4 and 5% during 2018 before reaching a peak of 4% during 2019.

Billing levels (see graph on p 8)

The billing level among listed companies increased during 2017 but, as already reported, decreased somewhat during the first three quarters. The billing level was 76.0% during the first six months of 2017 and 76.4% during the second half of the year. In the first half of 2018 it was 75.9%. It should be pointed out, however, that there are no billing levels available for all listed companies in Sweden. So the statistics are somewhat flawed.

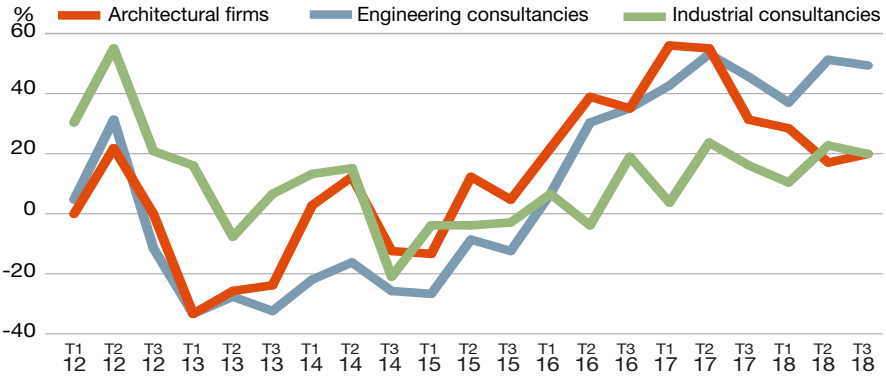
In STD-företagen's own surveys, there is a similar tendency. The billing level rose in 2017 but has levelled off during 2018. If we put the three groups together, without any form of weighting, the billing level was on average 79.6% during 2017 compared with 78.9% in 2016. During the first two four-month periods it was 79.1%. The industrial consultants had the highest billing level in 2017, namely 80%. During 2016 it was 78.5%. The billing level among architects was 80.1% during 2017 compared with 79.4% in 2016. The billing level of engineering consultants was 78.4% during 2017, which is somewhat lower than the 79.0%



Hubben (the hub) by Uppsala Science Park. Designed by White Architects.

PHOTO: ÅKE E:SON LINDMAN

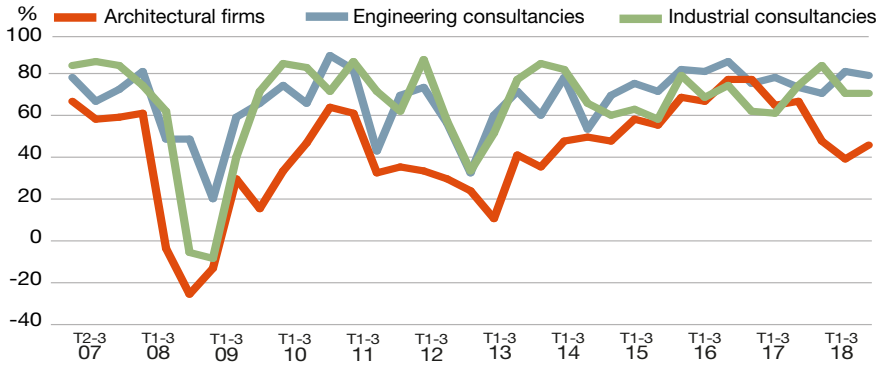
The Group's opinion about the development of the price situation



The price trend graphs show net figures for the proportion of firms that have raised their prices minus those that have lowered their prices over the past six-month period.

Source: The Swedish Federation of Consulting Engineers and Architects

Manpower development

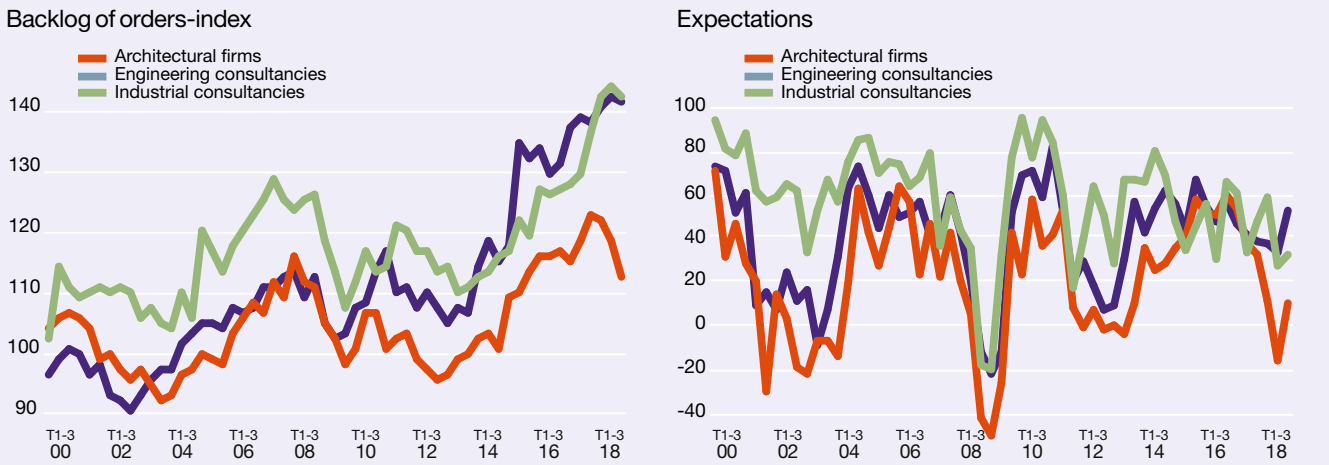


The expectations regarding how manpower will develop show net figures between the proportion of firms which believe their working force will increase minus those who believe it will decrease over the coming six-month period.

Source: The Swedish Federation of Consulting Engineers and Architects

> SALARY COSTS PER EMPLOYEE GREW BY 4.5 % IN 2017.

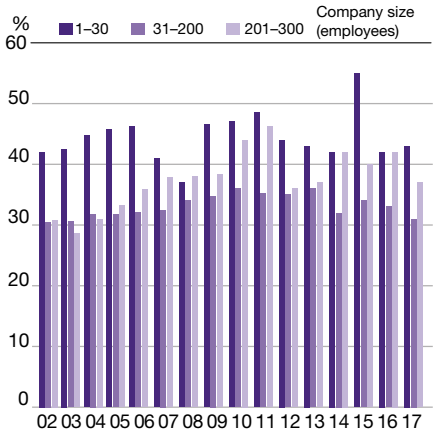
Backlog of orders – index compared with order forecasts (expectations)



The order backlog index is based on questionnaire surveys among STD member firms, and is calculated by weighing between the orders in hand per employee and the order level in 2, 3, 6 and 12 months' time. The expectations' curve represents net figures for the proportion of firms that anticipate an improved order situation minus those that expect a worse order situation in 6 months' time.

Source: The Swedish Federation of Consulting Engineers and Architects

Equity ratio. %



Source: The Swedish Federation of Consulting Engineers and Architects

A comparison with other consulting industries, turnover/employee

Turnover/employee (kSEK)	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Management consultants	1820	1800	2075	2015	1890	1880	1906	1912	1823	1817	1924	2114	2336
IT consultants (adm.)	1170	1135	1440	1270	1290	1480	1545	1627	1703	1917	1987	1858	1879
Lawyers' offices	1595	1655	1750	1730	1690	1770	1840	1773	1921	1986	2104	2132	2177
Market surveyors	1070	1085	1280	1355	1295	1445	1465	1459	1437	1423	1466	1461	1448
Public relations and communication *)	1170	1265	1285	1320	1260	1235	1295	1269	1736	1808	1806	1849	1941
Auditors	1135	1250	1250	1230	1275	1280	1320	1332	1402	1433	1491	1524	1552
and as per our table on page 9													
Industrial engineering Consultants	902	905	908	912	941	980	1088	1171	1194	1181	1188	1239	1288
Architects/building engineering consultants	1010	998	1106	1101	1084	1040	1110	1148	1093	1143	1109	1114	1209

It is interesting to make a comparison with other knowledge-intensive sectors as it gives an indication of the different fee levels between various consulting industries. The following comparative figures from the 20–50 largest companies in a few selected sectors have been collected using Soliditets' business tool; Nordic Business Key.

Source: Swedish Federation of Consulting Engineers and Architects and Soliditet's Nordic Business Key

that was reported for 2016. During the first two four-month periods of 2018, the billing level among industrial consultants increased to 81.6 % whereas among architects it fell to 77.7 % while that of the engineering consultants decreased to 77.9 %. The expectations among companies were that the billing level would increase towards the end of 2018 and beginning of 2019. 38% of the companies believed there would be an increase in billing level up until March in the latest survey, which was conducted in September. Only 9 % believed in a decrease. In a somewhat longer time frame, namely for the whole of 2019, it is likely that the billing level will slow down somewhat compared with the levels in 2017 because the rate of incoming orders will probably slow down during the course of the year.

Price development (graph p 11)

Price trends are still moving in the right direction, and the average fees are increasing. However, they are not increasing at the same rate as the payroll costs. During 2017, the average fees increased by approximately 3 %. During the first two four-month periods of 2018 they have increased by approximately 2 %. The engineering consultants have en-

INTERVIEW
TORE STRANDGÅRD
CEO INCOORD

"I BELIEVE THAT INVESTORS HAVE NOTED THE FACT THAT **WE DO NOT CHARGE THEM FOR OUR SERVICES IN RELATION TO THE VALUE THEY CREATE**

How would you describe developments in the sector for engineering consultants today compared with ten years ago?

There has been healthy development among engineering consultants for the past ten years. A greater focus on energy and environment-adapted construction means that the engineering consultancy services are now in greater demand and are more complex. The awareness that the details affect the project as a whole has meant that an understanding is needed for several parts of the process and that the sub-optimisations that have frequently had to be made have not proved to be sustainable after several years' actual use. There is a much greater interest for the real outcome of the comfort, energy and environmental performance of a building. In the past, the focus has been on abiding by the rules and regulations. Greater demands on the part of tenants and a dissatisfaction with the fact that this has been encouraged by theoretical values and not the real situation. Our assignments will be increasingly complex and contain more disciplines today than ten years ago.

What are the greatest challenges facing the sector today?

The industry is struggling with price pressure despite a strong market. There has, however been a change in the attitude towards the content of consulting services. Purchasing the lowest hourly rate has moved on to competence inflation in, above all, public procurements. Formulae have become a very important factor in procurements at the expense of real competence. Digitalisation of the sector has been in progress for a long time and new steps are being taken all the time. We consultants have worked with BIM for many years but now we can see an interest in it emerging on the part of our customers. We can today supply custom-made models with data that meet the requirements of individual clients in a better way. One challenge will be to administer these models so that they can be used for future conversions. Today's building process is not designed to gain benefit from digitalisation to the fullest extent possible. New players are entering the arena who want to take market shares in a sector where the digital tools are being developed at a slow rate. The challenge is to recognise the opportunities and advantages without jumping on the band wagon of untried solutions that could give rise to long-term problems. The advantage of our role is that we are rapidly learning the new methods and tools that are needed for a more automated building process – we are ready when the sector is mature.

Tore Strandgård, CEO Incoord

The sector has been consolidated during recent years – large companies have become larger while small and medium-sized companies have developed niches. What does the strategic choice look like as far as you are concerned?

We have chosen to broaden our activities and offer cutting-edge skills in the fields of installation engineering and sustainable construction. We want to be an independent alternative for buyers of engineering consultancy services. We are aware that there is a market for pure engineering consultants who have a high level of competence within respective technical areas and have the capacity to understand the impact made by the details on the project, as a whole. Being sensitive to the wishes of customers and engaging in their operations are extremely important features. Our basic driving force is satisfied customers and satisfied staff. If we begin to focus on growth and financial targets we lose or focus on what is important – having a good time and doing a good job. We have a long-term perspective for our clients and our staff. They shall feel secure in the knowledge that we can be a long-term partner irrespective of the economy and market situation.

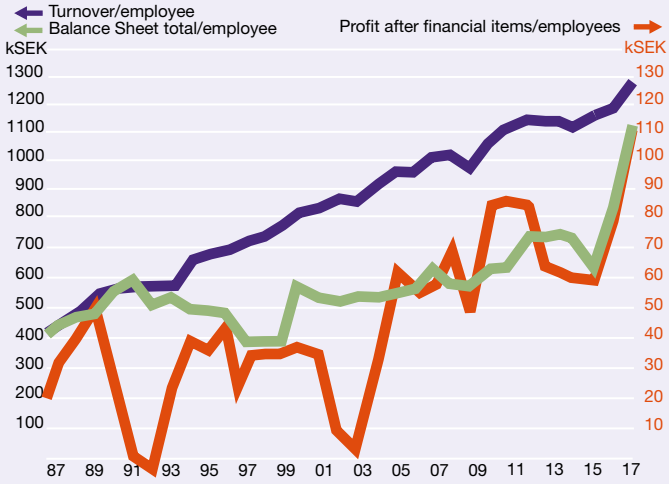
Do you see any clear trends that are likely to change the sector over the next five to ten years? Think in terms of corporate structure, and size and business model.

The past ten years have seen new players emerging who have shown an interest in the sector. Previously, it has been the large groups that have accounted for basically all purchases. Now it is pure investors who see an opportunity in a sector, which in terms of business operations, is immature. It is to some extent an economy-related phenomenon, but I believe that investors have noted the fact that we do not take out payment for our services in relation to the value that they create. Shedding light on the long-term background value is a challenge for the sector. I also believe that new players will try to enter the market in step as digital tools become increasingly powerful and can be used for a growing number of purposes. However, the skill is needed to use them so that they create benefit. The need for more resilient societies will also make demands on the technical systems and how we think and design supply systems in the future. Climate changes and the security situation have placed resilience on the agenda for tomorrow's built environments.

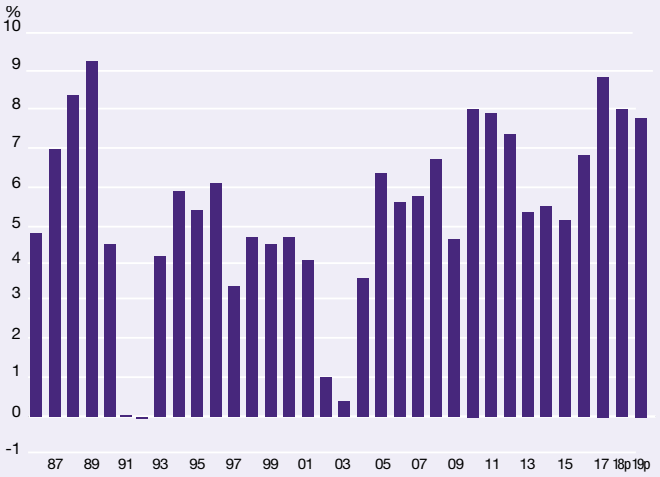
joyed stable development during 2017 and 2018. The architectural companies showed a stronger price development in 2017 and a much weaker trend during 2018. The industrial consultants experienced a weak increase during 2017 and a more vigorous upswing in 2018. In the latest member survey, which was conducted in September, 40% of the participating companies stated that they had raised their average fees between May and September. Only 7% reported that they had lowered their prices. But a decelerating housing sector, fewer investments in commercial premises and a growing share of investments in public premises, with public sector clients, it is likely that price development will slow down during 2019 for the construction-oriented companies. In the case of the industrial consultancies, it is more difficult to predict, but with uncertain economic development in the world around us coupled with political instability, with trade restrictions and Brexit, it is possible that demand for the services of industrial consultants will slow down. This could of course have a negative impact on prices. It must, however, be added that no signals have yet been

> PERSONNEL TURNOVER IS APPROACHING 20%.

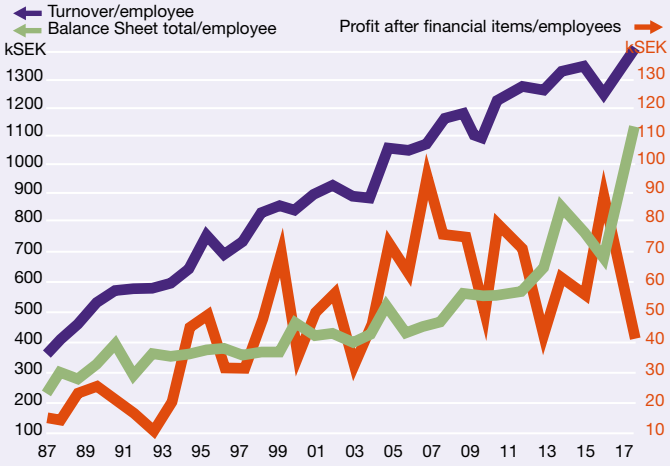
The top 30 Swedish groups



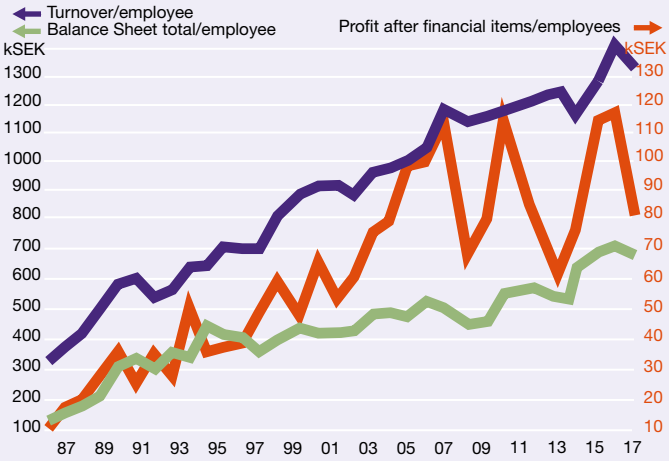
Profit margin in the top 30 groups



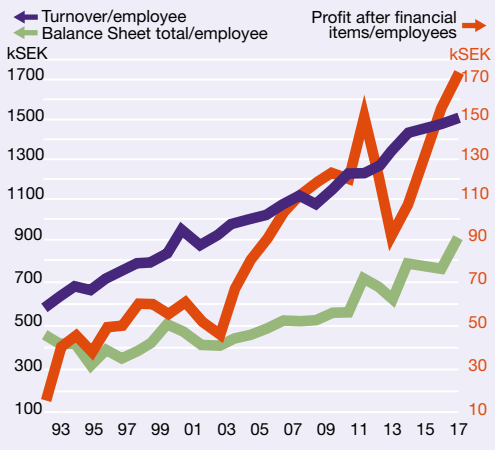
Group no. 31–50



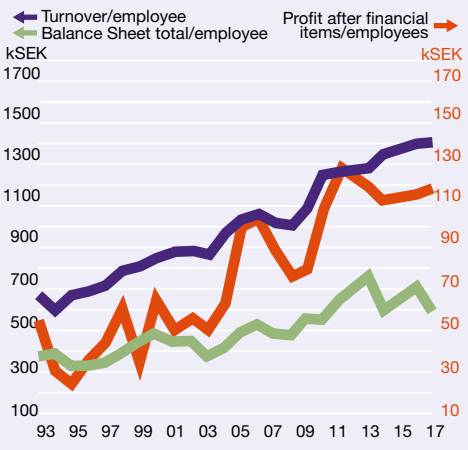
Group no. 51–100



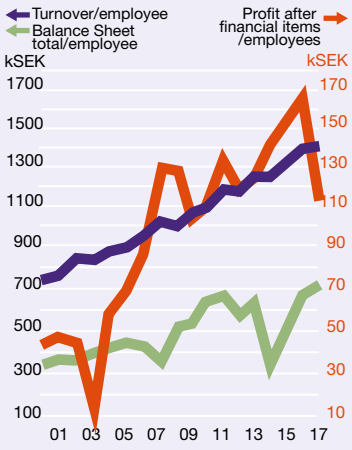
Group no. 101–150



Group no. 151–200



Group no. 201–300



Source: Swedish Federation of Consulting Engineers and Architects

INTERVIEW
JOHANNA FRELIN
CEO, TENGBOM

“IT IS TIME FOR THE POLITICAL AND ECONOMIC SECTORS TO **FIND SOLUTIONS TOGETHER**

Development in the housing sector has slowed down over the past year. How would you describe the development at sector level, or in other words to what extent does it affect the overall economy of the architectural sector?

We have all noted that the market has become more volatile and that forward planning is not as far ahead as it was in the spring. It is clear that the market requires new innovative solutions in order to solve the real challenges of society, such as the extremely rapid rate of urbanisation and socio-economic challenges.

The housing shortage has not been solved. What do you feel needs to be changed within the sphere of housing construction in order to stimulate investments again?

Johanna Frelin, CEO Tengbom

It is time for the political and economic sectors to find solutions together so that we can realise all the developments we have been talking about – to build faster, cheaper and with high quality. Today we are being bogged down in a complicated system that raises prices, delays and creates an extremely one-sided housing stock. A stock that in no way reflects society and our requirements for sustainability.

The consolidation trend has been in progress for many years now, and architects have been integrated with engineering consultants. What are the advantages and disadvantages of this?

The role of the architect is – and will always be – to defend and protect sustainability and the long-term values of individuals and society. These, notwithstanding corporate form or consolidation, must never be lost. Building an ecosystem of skills around the changes we see and wish to solve requires, of course, wider cooperation – from, for example, engineering consultants, but at the same time other skills within for instance, engineering, design and sustainability. We welcome this with open arms.

What are the current trends in the sector and what will they be in the future, say in five years' time? Think in terms of corporate structure, and size and business models.

The architect will, to an increasing extent, play the role of main consultant and strategic adviser. As an architectural firm we do this by broadening our competence internally but also by forming smart alliances, operating with “open books” and working extremely closely with our clients. We are then not only advisers for the specific project but also for the business operations as a whole. This is how we create value for the client and for society in general. With this shift, I envisage business models that move further and further away from traditional hourly pricing to bonus models for business operations.

received from the sector to indicate any such slowing down.

Strong order situation levels off

The sector's positive order status remained strong in 2017, but the onset of a slowdown began to be noted in the housing sector. This slowdown has continued in 2018 but is expected to speed up again in 2019. At the same time, assignments in connection with other premises, primarily offices and public premises, as well as infrastructure and civil works have continued to increase in 2018. The orders-in-hand index for all areas of business was lower in the last member survey, which was conducted in September. The orders-in-hand index is calculated by weighing between the orders in hand per employee and the stocking density in two, three, six and twelve months' time. This index has among architectural firms decreased in three consecutive surveys after peaking in September 2017. Among engineering consultancies, the index decreased marginally in September 2018 after a two-year-long positive trend. The orders-in-hand index among industrial consultants decreased after six consecutive surveys with rising values. Bearing in mind the successive record listings in order-in-hand indices, a slowdown can be expected. At the same time, 43% of the member firms believed in September that there would be an increase in incoming orders over the year-end, whereas only 7% thought there would be a decrease. The expectations among member firms concerning developments in the order situation, the Expectations Indicator, (see graph on p 12), shows the net ratio between positive and negative companies. The Expectations Indicator in the survey was thus +34 (41–7). In the May survey, the corresponding figure was +18 (31–13). So the expectations among companies were strengthened between May and September. There are still very few companies that register expectations of a worse situation with regard to incoming orders.

The incoming order trend among the industrial consultancies is strongly connected to the Swedish (and foreign) manufacturing industry. Swedish industry, and not least the export industry, has performed well in recent years. The recovery in Europe and the strong economy in the USA have contributed to an increase in the demand for export orders. At the same time, the domestic market has been sound. The prospects for the future are uncertain. The growth in GNP in the world around us is expected to slow down during 2019 and other factors of uncertainty, such as Brexit and trade restrictions, could reinforce such development. The demand for exports is expected to slow down for Swedish industry at the same time as the demand on the domestic market is relatively stable. In view of signals indicating a change in the economy, it is unlikely that the demand for the ser-

THE TOP 50 ARCHITECTURAL GROUPS

	18	17	Group	Annual report	Turnover MSEK	(Previous year)	Em-ployees
STD	1	2	Sweco Achitects (acquired Årstiderne in Denmark) *	17	1408.0	834.0	1096
STD	2	1	White Architects	17	918.7	892.2	680
STD	3	3	Tengbom group (acquired Werket Arkitekter) *	17	705.6	628.4	677
	5	12	ÅF (SandellSandberg, Koncept Sthlm, Tegn 3) *	17	399.1	140.5	278
STD	6	5	Tyréns Architecture	17	250.0	240.0	250
STD	4	4	PE Arkitektur, incl.Temagruppen & Novamark *	17	295.5	275	229
STD	8	10	Arkitekterna Krook & Tjäder AB	17	206.0	153.3	195
STD	7	7	Wingårdh group	17	211.1	178.6	166
STD	9	11	Liljewall Arkitekter AB	17	201.4	151.4	158
STD	15	8	Semrén & Månsson Arkitektkontor AB	16/17	159.1	142.8	156
STD	12	9	Link Arkitektur AB	17	176.4	157.4	155
STD	10	6	Arkvision AB, fmr Mälarholmen (Ettelva Arkitekter & M.E.R. Solution)	17	184.7	187.3	148
STD	11	13	FOJAB AB	16/17	177.8	139.0	131
STD	14		Norconsult arkitektur (acquired Monarken) *	17	162.7		124
STD	16	18	Arkitema AB	17	148.0	97.7	112
STD	17	14	NYRÉNS Arkitektkontor AB	17	139.9	138.3	97
STD	18	17	ÅWL Arkitekter AB	17	130.4	101.8	94
STD	13	15	AIX Arkitekter AB (annual report 18 months)	16/17	174.8	116.9	91
STD	26	23	Cedervall Arkitekter	17	80.1	78.8	78
STD	20	16	Brunnberg & Forshed Arkitektkontor AB	17	106.1	103.7	73
STD	25	20	BSV Arkitekter & Ingenjörer AB	17	86.7	82.0	72
STD	22	22	Reflex Arkitekter (acquired PS Ark) *	17/18	93.6	81.0	71
STD	24	19	Byrån för Arkitektur & Urbanism (BAU)	17	91.8	85.8	69
STD	28	25	BSK Arkitekter AB	17	77.1	69.7	56
STD	19	21	Archus AB	17	119.2	81.4	54
	27	24	Strategisk Arkitektur Fries & Ekeroth AB	17	77.4	72.1	51
STD	30	26	Equator Stockholm AB	17	68.7	69.4	50
	42	39	Kjellander & Sjöberg AB	16/17	45.3	39.5	48
STD	37	45	Okidoki AB	17	50.2	36.9	48
STD	31	33	Carlstedt Arkitekter AB	17	62.6	49.7	47
STD	23	36	C.F. Møller Sverige AB	17	93.3	47.5	47
	29	29	Wester+Elsner Arkitekter AB	17	72.7	64.7	46
STD	40	30	Yellon AB	17	47.7	53.3	46
STD	32	43	Kanozi Sverige AB *	16/17	61.4	37.7	46
STD	39	34	SYD ARK Konstruera AB	17/18	49.0	48.7	45
	33	27	Codesign Sweden AB	16/17	59.9	66.3	43
STD	21	28	A & P Arkitektkontor AB	17	96.6	66.0	40
STD	38	38	Lindberg Stenberg Arkitekter AB	17	49.2	40.6	40
STD	34	32	MAF Arkitektkontor AB	16/17	59.3	50.4	38
	41	50	ABAKO Arkitektkontor AB	17	47.0	32.5	38
STD	46	47	Alessandro Ripellino Arkitekter	17	38.9	36.5	36
STD	35	35	Scheiwiller Svensson Arkitektkontor AB	17/18	58.1	47.5	34
STD	44	41	Landskapslaget AB	17	39.9	38.7	31
STD	45	42	Arkitektgruppen G.K.A.K AB	17	39.8	38.2	31
STD	36		Niras (acquired Aperto Ark) *	17	53.3		31
	43	44	DinellJohansson AB	17	43.7	36.9	30
STD	47	48	Erséus Arkitekter AB	17	38.7	34.4	30
STD	49	73	KUB Arkitekter AB	16/17	37.6	24.2	28
STD	48	46	Thomas Eriksson Arkitektkontor AB	17	38.4	36.6	26
	50	37	DAP Stockholm	17	37.2	43.4	16

STD = Member of the Swedish Federation of Consulting Engineers and Architects. (*) = lack of conforming figure/proforma/assumed.
The 50 largest architectural groups had a turnover of SEK 8,070 million in 2017 (previous year SEK 6,385 million). The average number of employees was 6,276 (5,055) and the turnover per employee SEK 1,286,000 (SEK 1,263,000). The list contains those groups in which architectural activities dominate.

Source: Swedish Federation of Consulting Engineers and Architects

vices of industrial consultants will continue to be as strong during 2019. The question is whether or not development is slowing things down and levelling off or reducing the demand. The most likely outcome, however, is a type of development in line with what happened in 2018, with small upswings and downturns in terms of orders with no dramatic change, but nevertheless a certain slowing down.

Investments in the sector (graph p 8)

The table on page10 shows the investments made within the sector during 2017 and forecasts for investment trends in 2018 and 2019. Investments in building and civil works increased by 8% between 2016 and 2017 to a total of SEK 512 billion. Consequently, the sector has an influence on the development of just over 10% of Sweden's GNP, which during 2017 was SEK 4 604 billion. The increase was driven primarily by the housing sector, which increased by 12% during the period in question. However, housing investments began to slow down towards the end of 2017 and are calculated to decrease by 2% during 2018 and 9% in 2019. Investments in premises (offices, commercial property, public and experience industry premises) will continue to increase during the current and coming year. The same applies to investments in infrastructure and civil works. This means that the downswing in housing investments is balanced relatively well by local and infrastructure investments.

The investments made by industry in machinery and equipment increased by 3% in 2017 to SEK 58.2 billion. This year they are expected to drop by approximately one per cent and then level off or possibly increase again in 2019.

Manpower development (graph p 11)

The need for recruitment continues to be significant throughout the entire sector. 74% of the companies that participated in the latest member firm survey reported that they need to recruit whereas only 3% stated that they need to reduce

THE TOP 50 GROUPS WITHIN INDUSTRIAL ENGINEERING

	18	17	Group	Annual report	Turnover MSEK	(Previous year)	Em-ployees
	1	1	ÅF divisions (incl. acquisitions) *	17	8460.3	7130.0	6201
STD	2	2	Sigma Group (industry, technology, IT) *	17	3366.4	2740.0	3211
	3	4	Combitech AB	17	2173.3	1789.1	1730
STD	4	5	Semcon AB	17	1849.5	1755.9	2032
STD	5	8	Sweco (Industry & Energy)	17	1844.0	950.0	1376
	6	6	HIQ International AB	17	1787.9	1659.4	1449
STD	7	3	Rejler group (industri & Energi) *	17	1275.0		964
	8	7	Alten Sweden	17	1172.5	994.6	1280
STD	9	9	WSP Industry	17	854.0	772.0	828
	10	11	Altran Sweden	17	649.5	530.6	500
STD	11	13	Knightec AB	16/17	485.8	457.9	503
STD	13	14	COWI Industry	17	470.0	460.0	440
STD	12	15	Etteplan Sweden AB	17	445.0	420.2	445
	14		AVL MTC Motortestcenter AB (acquired Vicura)	17	316.1	288.0	201
STD	15	17	Avalon Innovation AB	17	286.2	311.5	204
	16	19	Z-Dynamics (Infotiv & Combine)	17	281.4	224.4	260
	17	21	Eurocon Consulting AB	17	277.5	214.2	285
STD	18	18	Consat AB	17	269.6	235.1	190
	19	23	Elektroautomatik i Sverige AB	17	248.0	173.7	105
STD	20	16	Ansaldo STS Sweden AB	17	236.6	383.8	66
STD	21	28	Devport AB	17	235.2	154.0	224
STD	22	20	Projektengagemang (PE Industri)	17	217.4	218.0	210
	23	22	Essiq AB	17/18	199.1	175.5	173
	24	25	TechniaTranscat AB	17	192.6	169.3	96
STD	25	43	Ansys Sweden	17	188.5	85.7	24
STD	26	24	Neste Engineering Solutions (fmr Neste Jacobs)	17	182.5	169.8	145
STD	27	36	Engineeringpartner Automotive Nordic AB	17	175.7	112.7	153
STD	28	26	i3tex AB	17	174.8	165.5	196
STD	29	27	FS Dynamics AB	17/18	167.1	160.3	165
STD	30	31	HRM Engineering AB *	17	162.2	136.4	170
STD	31	30	Core Link AB	17	148.2	146.0	51
STD	32	35	Segula Technologies AB	17	134.7	122.9	146
	33	37	T-Engineering AB	17	127.3	110.9	65
STD	34	34	Escenda Engineering AB	16	125.1	103.8	95
	35	38	QRTECH AB	17	121.9	109.4	80
STD	36	32	Cactus Utilities & Rail *	17	118.1	130.7	68
	37	29	Optronic Partner PR AB	17	113.5	146.7	56
STD	38	39	Condesign AB	17	104.1	107.3	121
	39	44	Technogarden Engineering	17	104.0	92.6	111
STD	40	42	Havd Group	17	103.1	95.1	35
STD	41	41	AcobiaFlux AB *	17	100.4	96.2	56
STD	42	47	Prose AB	17	98.8	85.02	69
	43	45	TechRoi AB	17	92.6	87.3	71
	44	58	Svensk Konstruktionstjänst AB	17	89.7	64.9	33
	45	51	Devex Mekatronik AB	17	88.5	76.1	102
STD	46	57	Adiga AB	16/17	88.0	67.2	43
STD	47	82	One Nordic (Konsult & Mätteknik) AB	17	87.4	38.9	97
	48	54	Assign Group *	17	86.9	70.0	24
STD	49	49	Conmore Ingenjörsbyrå AB	17	86.8	78.9	120
	50	46	Veryday AB (fmr Ergonomidesign)	15/16	85.3	97.5	57

STD = Member of the Swedish Federation of Consulting Engineers and Architects. (*) = lack of conforming figure/proforma/assumed. The 50 largest groups within industrial engineering had a turnover of SEK 31,287 million in 2017 (previous year SEK 27,846 million). The average number of employees was 25,972 (24,337) and the turnover per employee SEK 1,205,000 (SEK 1,144,000). The list only includes groups where industrial engineering consultancy is the dominating activity.

Source: Swedish Federation of Consulting Engineers and Architects

their personnel strength. The greatest need for recruitment was shown by the engineering consultants, where 84% required staff and none of them needed to decrease their personnel. The scenario for industrial consultants is similar: 75% needed to employ and none of them needed to cut back on personnel. The architectural firms displayed a somewhat lower need to employ staff. 49% needed to recruit while 10% needed to reduce the size of their personnel. In the case of the architectural firms their need to recruit has decreased during 2018 in comparison with 2016 and 2017. This is due, of course, to the slowdown that is taking place in the housing sector.

There has been a high demand for recruitment in the sector for a number of years and the situation has not been changed very much by the order status. There is a shortage of available competence which means that the demand for recruitment does not vary much as a consequence of the economic situation. There are almost always three or four companies that have vacancies they cannot fill. The shortage is structural and the companies therefore recruit from each other.

The staff turnover in the sector has also increased successively for many years. During 2017 it was on average 18% compared with approximately 15% in 2015 and 2016, and 11% during 2014. Ten years ago it was barely 10%. During 2018 it is likely to reach 20%. The highest staff turnover is attributable to the engineering consultants. In 2017 their staff turnover was 22.8%. During the same period, the engineering consultants had a staff turnover of 17% and the architectural firms 11.5%.

The shortage of competence and the high staff turnover that it leads to has an impact on payroll expenditure in the sector, which has held levels of between 4–5% during recent years. This is, of course, a problem for the sector because it is difficult to raise prices at the same rate. In June 2018, the shortage of competence was calculated to be 7000 persons. In other words, the sector could employ a further 7000 staff in addition

INTERVIEW
MIKAEL VATN
CEO ETTEPLAN SWEDEN AND CHAIRMAN STD-FÖRETAGEN

CONSOLIDATION WILL CONTINUE BECAUSE THE ADVANTAGES OF BEING A MAJOR PLAYER ARE MANY AND SELF-EVIDENT

How would you describe developments in the sector among industrial consultants compared with the situation ten years ago?

Industrial consultants have during the past ten years taken major strides in the direction of turnkey undertakings in which we as suppliers direct the work and provide our clients with a result. It has also led to an increase in the value of our services. In this 10-year perspective I should also like to draw attention to the serious depression experienced by the sector over the period 2008–2009, especially within the vehicle industry, which had major consequences for many companies. Over the past five years the industry has undergone a period of vigorous growth, which is a sign that the services we offer to our clients are relevant, at the same time as our clients have in their turn experienced a strong economy. As a consequence of innovation, new technology has been commercially applicable, such as Additive Production, known more commonly as 3D-printing, and is today used by a number of large companies when the technology gives clear-cut advantages in terms of design and production. The interest shown in Artificial Intelligence has also increased in many areas. One example is companies with

Mikael Vatn, CEO Etteplan Sweden and Chairman STD-företagen

large complex installations that can achieve major benefits in operation and maintenance. In general, it can be concluded that digitalisation has influenced, and will continue to influence, the development of the sector to a great extent.

What are the main challenges facing the sector today?

At present, a lack of personnel with the right skills set is one of the greatest challenges that we share with our customers. In the metropolitan areas, this is especially evident where the lack of competence is having a negative impact on both ourselves and our clients. Over the years, many of our clients have focused their efforts on forcing down hourly rates, and we have not in general been successful enough in highlighting the value of our services. However, the substantial demand has had a favourable impact on prices during recent years. Those areas with the fastest growth rate for industrial consultants are specific competences within the fields of software development, Additive Production, battery technology and systems engineering.

The sector has been consolidated during recent years. Engineering consultants within the areas of building and architecture have been merged with industrial consultants. What advantages does this offer? Are there any synergy effects, spheres of knowledge or lessons to be learnt that we can benefit from?

There are definitely synergies between the various competences in our member firms from which we can benefit. Working methods, processes and competence development are a few such areas. We industrial consultants are, for example, good at setting demands in development projects to guarantee that time schedules and results succeed in meeting the established goals, whereas engineering consultants are good at re-applying designs and integrating between different technical areas – something to which the introduction of BIM has contributed. Cross-border cooperation is in general positive and increases the level of understanding for the whole situation. Architects are important in order to guarantee the required function, but also so that economy and beauty meet the expectations of the client. In Denmark, the architect is often the design manager – a solution that could perhaps also be applied in Sweden.

Can you see any clear trends that will change the sector over the next five to ten years? Think in terms of corporate structure and size, and business models.

Consolidation will continue because the advantages of being a major player are numerous and clear to see. A company's investments in its own systems, tools, processes and software are a precondition for innovation as well as for being able to take on large undertakings and thereby supplying a higher value for our customers. As consultants, we often deliver concrete results in the form of, for instance, design drawings directly into our clients' systems where we coordinate our supplies with other suppliers who are appointed by the client. This makes heavy demands on client system know-how and at the same time means that we come closer to our clients and are sometimes included in their ecosystems, where the borders between client and supplier are erased. This will require the continued development of our business models for consulting services. The entire procurement and supply chain will continue to be digitalised and there will be a much clearer division between purely transactional deals on the one hand and partnership on the other.

to the 66 200 it already employs. Recruitments from competitors have also increased during recent years as a consequence of these factors. Among the recruitments made by the member firms in 2017, 55% were from competitors.

Age and gender structures

The member companies of Svenska Teknik&Designföretagen have an integrated personnel force of approximately 37 000 in Sweden. This is equivalent to just over half the number of staff employed within the entire sector. According to the Confederation of Swedish Enterprise salary statistics, 35% of the integrated personnel force during 2017 were women, which is an increase compared with 2016 when the figure was 32%. The tendency is towards a continual increase in the proportion of women, which in 2007 was 26%. So it has changed from every fourth to every third employee over a period of ten years. The proportion of women who were managing directors rose to every third employee over a period of ten years. However, the share of women who were managing directors decreased between 2017 and 2018. In November 2018, 11% of the managing directors of the 300 largest companies were women. During the same period in 2017 the figure was 12%. The proportion of women who are represented on boards of directors among the 300 largest companies was 21%, which is the same (20.9%)

The Dockan city block in Gothenburg. Desinged by White Architects.

PHOTO: KALLE SANNER

as the previous year. The share of women in decision-making positions was 26.9% compared with 29.6% the previous year.

The average age among the 37 000 members of Svenska Teknik&Designföretagen was 40.4 during 2017 compared with 40.8 in 2016. It has decreased among both men and women. The average age of female members was 39.2 in 2017 compared with 395 in 2016. The average age of male members was 4.1 compared with 41.2 in 2016.

Swedish structural deals

Consolidation and globalisation continue to characterise development in the sector. The foreign players in Sweden are growing in number at the same time as Swedish groups are expanding abroad.

A description is given below of some of the business activities that have taken place during the course of the year and a number of new developments that have occurred in connection with changes in management.

Sweco with a new management …

In March, the head of Swedish operations at that time – Åsa Bergman – was appointed to be Tomas Carlsson's successor as CEO for **Sweco** after 27 years in the Group. Åsa Bergman's position as Managing Diretor for Sweco Sweden was filled by Ann-Louise Lökholm Klasson, formerly Managing Director for Sweco's construction and civil engineering operations.

> THE FEMALE SHARE OF THE INDUSTRY'S WORKFORCE WAS 35 % IN 2017.

…makes foreign acquisitions

All six acquisitions undertaken by Sweco during 2018 were made abroad. First its architectural operations were strengthened in Denmark by the acquisition of **Årstiderna Arkitekter**, with 224 employees and a turnover of some SEK 320 million. In Germany, the year also saw the acquisition of building consultants **BML Ingenieure** with 21 employees and environmental and water supply consultants **Götzelman + Partner** with 26 employees. In Belgium, concrete and steel designers **Planet Engineering** and installation consultants **Nelixis** were purchased, which together have 20 employees.

In Finland, the installation consultancy **Avecon** was acquired with 33 employees and approximately SEK 30 million in turnover, thereby reinforcing Sweco's position in Österbotten.

Meyer takes over as CEO for WSP Europe

In January, Sweden and Nordic Area Manager Magnus Meyer also took on the role of CEO for **WSP Europe** with some 16 000 employees. WSP has doubled its size in the Nordic countries since 2014. This growth is especially marked in Sweden where, for example, 1000 new employees were recruited during 2017. October saw the acquisition of the analysis firm **Kontigo**, with 20 employees, thereby strengthening competence in the analysis area.

ÅF continues to be top shopper

ÅF continues to be top shopper on the Swedish market and accounted for eight acquisitions during 2018. It began the year with the acquisition of the Danish firm **Gottlieb Paludan Architects**, with 90 employees and a turnover of SEK 140 million. In Sweden, website and app developer **Samtanke AB** was purchased together with 6 employees, IT consultants **Konsultbolag1** with 98 employees, and electrical and telecom consultants **Effekt** with 40 employees.

In Norway, the project management and advisory service firm **Mometo** was acquired with 14 employees. In Finland, the electrical engineering firm **Profil-Bau Industrial** was purchased with 70 employees. In October, ÅF turned is sights on Denmark again through the acquisition of electrical power consultants **P.A.P.** with 46 employees. In the southern part of Switzerland, the environmental and installation consultants **IFEC Ingegneria** was purchased with 80 employees.

Viktor takes on top post at Rejlers

In February, Viktor Svensson, who previously worked for 15 years at ÅF, took on the position of Managing Director and CEO at **Rejlers**, thereby succeeding Peter Rejler, who in May was appointed the new Chairman of the Board. March saw the acquisition of the consulting division from Scania-owned **DynaMate** with 31 employees, thereby strengthening its competence within REHVA and the security area.

PE continues to buy

Projektengagemang continues to expand through acquisition and has, during 2018, purchased four companies in Sweden – in March, Örebro-based **ROOF Arkitekter** with 16 employees was purchased and Gothenburg-based **Smedjan Projektledning** with some 70 employees, active in the areas of project, design construction and installation management. June and September saw the acquisition of fire protection consultants **FAST Engineering Göteborg AB** with 33 employees and **PreCendo AB** with 14 employees.

Architectural firm deals

In April, **Tengbom's** Uppsala branch acquired **Werket Arkitekter** with 23 employees, thereby strengthening its operations in Uppsala, which are now staffed by a total of some 70 architects. In January, Arkitekterna **Krook & Tjäder** acquired the Kristianstad firm **Uulas Arkitekter** with 30 employees. Another acquisition took place in April when **Reflex Arkitekter** purchased **PS Arkitektur** with 9 employees.

Mälarholmen becomes Arkvision

Mälarholmen, which consists of **Ettelva** and its sister company **MER**, changes its name to **Arkvision** and expands when **Ettelva** acquires **Millimeter Arkitekter** with 10 employees thereby strengthening the services it offers to hotel operators and property owners. The new constellation employs just over 120 architects.

In April, **Semcon** acquired the German company **HAAS-Publikationen GmbH** and in so doing increased its presence in the field of product information on the German market with 50 employees.

In July, **Forsen Projekt** aacquired the åroject management firm **Projektgaranti** with approximately 35 employees and SEK 53 million in turnover. Projektgaranti is expected to strengthen Forsen's position in the Gothenburg area. The Group as a result passed the 200 employee mark.

Hifab purchases **Byggkultur Mittkonsult AB** with 2 employees and in this way strengthens its competence in the restoration and conversion of cultural historical buildings and listed buildings.

Late news update

Just before this report was sent to print **ÅF** and **Pöyry** announced their merger, pending approval of shareholders in Pöyry. The deal consists in an acquisition offer from ÅF to Pöyry shareholders worth a total of approximately 611 million Euro. The new group would adopt the combined name of ÅF Pöyry and would challenge Sweco as the largest consulting engineering firm in the Nordic region.

THE 30 LARGEST GROUPS IN SWEDEN

(THE FIGURES REPRESENT ACTIVITIES IN SWEDEN)

	2018	2017	Group	Service	Annual report	Turnover MSEK	Turnover in Sweden MSEK	Employees	Employees in Sweden
	1	1	ÅF (8 acquisitions in 2018) *	MD	17	13051.7	**9650.7**	9646	**7175**
STD	2	2	Sweco AB (6 acquisitions in 2018) *	MD	17	17306.8	**7024.0**	14849	**5526**
STD	3	3	WSP Sweden (acquired Kontigo) *	MD	17	5712.6	**5712.6**	4782	**4782**
STD	4	4	Sigma Group	I,CE	17	3510.8	**2891.5**	3317	**2364**
STD	5	5	Ramboll Sweden (acquired RSM&CO) *	MD	17	2175.3	**2175.3**	1582	**1582**
	6	6	Combitech AB	I	17	2173.3	**2137.6**	1730	**1730**
STD	7	7	Tyréns AB	MD	17	2211.6	**1836.7**	2142	**1581**
STD	8	10	COWI AB (acquired PB-Teknik) *	MD	17	1441.7	**1441.7**	1200	**1200**
	9	8	HIQ International AB	I	17	1787.9	**1436.1**	1449	**1120**
STD	10	9	Semcon AB (acquired HAAS Publikationen in Germany) *	I	17	1849.5	**1350.0**	2032	**1256**
STD	11	12	Projektengagemang (4 acquisitions in Sweden, in 2018) *	MD	17	1253.3	**1253.3**	1064	**1064**
STD	12	11	Rejler group (acquired DynaMates consultancy division) *	E,I,CE	17	2505.1	**1237.0**	1952	**1076**
	13	13	Alten Sweden	I	17	1172.5	**1172.5**	1280	**1280**
STD	14	14	White Architects	A,PM,Env	17	918.7	**895.8**	680	**659**
STD	15	15	Kiwa Inspecta (incl. Technology & Nuclear) *	CT	17	759.8	**759.8**	616	**616**
	16	16	Structor group	CE,PM,Env	17	726.9	**726.9**	450	**450**
	17	29	Veolia Water Technologies AB	Env	17	680.7	**680.7**	138	**138**
STD	18	17	Dekra Sweden (Industrial + Automotive) *	CT	17	675.0	**675.0**	580	**580**
STD	19	18	Tengbom group (acquired Werket arkitekter)	A,IA	17	705.6	**674.7**	677	**647**
	20	19	Altran Sweden	I	17	649.5	**649.5**	500	**500**
STD	21	20	Norconsult AB (acquired Monarken) *	CE,Env,A	17	648.1	**648.1**	483	**483**
STD	22	21	Pöyry Sweden AB	MD,I	17	572.2	**572.2**	474	**474**
STD	23	22	Bengt Dahlgren AB	M,Enr,Env	17	532.5	**532.5**	419	**419**
STD	24	23	Knightec AB	I	16/17	485.8	**485.8**	503	**503**
STD	25	24	Bjerking AB	CE,M,A	17	473.8	**473.8**	367	**367**
STD	26	25	Etteplan Sweden AB	I	17	445.0	**445.0**	445	**445**
STD	27		Niras Sweden AB (with Aperto Ark & Hydracon) *	PM	17	421.5	**421.5**	163	**163**
	28	33	Forsen Projekt Partner (acquired Projektgaranti) *	PM	17	409.4	**409.4**	213	**213**
STD	29	28	ELU Konsult AB	CE	17/18	375.4	**375.4**	185	**185**
STD	30	27	Hifab Group (acquired Byggkultur Mittkonsult) *	PM,	17	446.0	**337.0**	312	**238**

STD = Member of the Swedish Federation of Consulting Engineers and Architects. (*) = lack of conforming figure/proforma/assumed – = missing figure
PM = Project Management, A = Architecture, CE = Civil/Structural Engineering, CT = Certification and testing, Env = Environment, Enr = Energy, E = Electrical, M = Mechanical/HEVAC, I = Industrial, MD = Multi Disciplinary

EXPLANATORY TEXT ON THE TABLES RELATING TO THE 30 LARGEST GROUPS IN SWEDEN AND THE 300 LARGEST SWEDISH GROUPS

The list of the 300 largest Swedish groups presents entire Swedish corporate groups, i.e. it also includes their international operations with subsidiaries abroad. In the case of the foreign companies, only their Swedish operations are presented.

The list of the 30 largest groups in Sweden presents only Swedish operations, even in the case of the larger Swedish groups. In other words, international operations in foreign subsidiaries are not included. The list shows which groups have the largest operations in Sweden.

In the case of foreign-owned companies, the same figures are in other words reported in both tables. We have included only the 30 largest groups in this list since most of the remaining groups only operate in Sweden or have marginal activities abroad.

THE TOP 300 SWEDISH CONSULTING ENGINEERING AND ARCHITECTURAL GROUPS

(GLOBAL FIGURES ARE PRESENTED FOR SWEDISH GROUPS)

	2018	2017	Group	Service	Annual report	Turn-over MSEK	(Previous year)	Average number of employees	Profit after financial items MSEK	Added value/ empl. kSEK	Total balance sheet MSEK	CEO/Managing director
STD	1	1	Sweco AB (6 acquisitions in 2018) *	MD	17	17306.8	16738.0	14849	1407.2	858	14279.0	Åsa Bergman (group CEO), Ann-Louise Lökholm Klasson (Managing Director Sweden)
	2	2	ÅF (8 acquisitions in 2018) *	MD	17	13051.7	11747.8	9646	996.9	885	11420.0	Jonas Gustavsson
STD	3	3	WSP Sweden (acquired Kontigo) *	MD	17	5712.6	4156.4	4782	217.5	869	3045.7	Magnus Meyer
STD	4	4	Sigma Group	I.CE	17	3510.8	2859.1	3317	219.5	742	1623.5	Dan Olofsson
STD	5	5	Rejler Group AB (acquired DynaMates consultancy division) *	E.I.CE	17	2505.1	2341.4	1952	23.7	780	1417.2	Viktor Svensson
STD	6	6	Tyréns AB	MD	17	2211.6	2075.7	2142	111.0	772	1507.5	Johan Dozzi
STD	7	7	Ramboll Sweden AB (acquired RSM&CO) *	MD	17	2175.3	1970.0	1582	169.0	910	634.4	Niklas Sörensen
	8	8	Combitech AB	I	17	2173.3	1789.1	1730	164.5	860	815.9	Hans Torin
STD	9	9	Semcon AB (acquired HAAS Pub, In Germany) *	I	17	1849.5	1755.9	2032	98.6	631	910.1	Markus Granlund
	10	10	HIQ International AB	I	17	1787.9	1659.4	1449	213.5	977	1194.0	Lars Stugemo
STD	11	11	COWI AB (acquired PB-Teknik & Arkitema) *	MD	17	1441.7	1330.5	1200	4.0	699	694.6	Acting CEO Anders Jacobsson, Anders Wiktorson from March 1, 2019
STD	12	12	Projektengagemang (4 acquisitions in Sweden, 2018) *	MD	17	1253.3	1137.7	1064	67.3	792	740.0	Per Hedebäck
	13	13	Alten Sweden	I	17	1172.5	994.6	1280	79.6	756	521.0	Martin Segerström
STD	14	14	White Architects	A.PM.Env	17	918.7	892.2	680	35.4	875	441.5	Alexandra Hagen
STD	15	15	Kiwa Inspecta (incl,Technology & Nuclear) *	CT	17	759.8	764.4	616	23.3	919	258.0	Maria Lustin
	16	16	Structor group	CE.PM.Env	17	726.9	680.3	450	106.2	1179	310.6	Fladvad, Hulthén, Texte
STD	17	18	Tengbom Group (acquired Werket architects) *	A.IA	17	705.6	628.4	677	36.2	771	284.6	Johanna Frelin
	18	19	Veolia Water Technologies AB	Env	17	680.7	549.3	138	-45.1	896	319.9	Fabrice Brochet
STD	19	17	Dekra Sweden (Industrial + Automotive) *	CT	17	675.0	652.0	580	43.2	902	1040.0	Stefan Törngren (Industrial), Jan Martinsson (Automotive)
	20	20	Altran Sweden AB	I	17	649.5	530.6	500	25.9	877	328.3	Fredrik Nyberg
STD	21	21	Norconsult AB (acquired Monarken) *	CE.Env.A	17	648.1	529.9	483	34.0	907	269.1	Ljot Strömseng
STD	22	22	Pöyry Sweden AB	MD.I	17	572.2	525.1	474	29.4	808	143.7	Johnny Strid
STD	23	23	Bengt Dahlgren AB	M.Enr.Env	17	532.5	496.5	419	35.7	1008	218.4	no CEO
STD	24	24	Knightec AB	I	16/17	485.8	457.9	503	41.6	768	134.2	Dimitris Gioulekas
STD	25	26	Bjerking AB	CE.M.A	17	473.8	440.8	367	27.1	983	237.2	Anders Wärefors
STD	26	25	Hifab Group (acquired Byggkultur Mittkonsult) *	PM.	17	446.0	474.9	312	17.3	761	180.2	Patrik Schelin
STD	27	27	Etteplan Sweden AB	I	17	445.0	420.2	445	21.6	761	159.8	Mikael Vatn
STD	28	29	Niras Sweden AB (with Aperto Ark & Hydracon) *	PM	17	421.5	343.5	163	2.9	1022	150.0	Christian Sandberg
	29	34	Forsen Projekt Partner (acquired Projekt-garanti) *	PM	17	409.4	256.9	213	24.2	1114	209.9	Bengt Johansson
STD	30	30	ELU Konsult AB	CE	17/18	375.4	338.2	185	36.0	1145	127.5	Charlotte Bergman
STD	31	32	IVL, Svenska Miljöinstitutet	Env.Enr	17	327.7	294.7	132	4.7	1566	225.6	Tord Svedberg
	32		AVL MTC Motortestcenter AB (acquired Vicura)	I	17	316.1	288.0	201	8.3	916	246.9	Erik Osnes
STD	33	31	Avalon Innovation AB	I	17	286.2	311.5	204	-10.0	804	178.5	Peter Mattisson
	34	36	Z-Dynamics (Infotiv & Combine)	I	17	281.4	224.4	260	16.3	760	163.0	Alf Berntsson (Infotiv), Peter Karlsson (Combine)
	35	37	Eurocon Consulting (acquired KLT Konsult) *	I	17	277.5	214.2	285	32.3	788	166.5	Peter Johansson
STD	36	35	Consat AB	I	17	269.6	235.1	190	11.4	862	108.1	Martin Wahlgren
	37	43	Elektroautomatik i Sverige AB	I	17	248.0	173.7	105	15.7	868	148.8	Jonas Kjellberg
STD	38	39	Golder Associates AB	CE. Env	17	242.3	206.6	126	14.1	982	145.4	Anna-Lena Öberg Högsta
STD	39	28	Ansaldo STS Sweden AB	I	17	236.6	383.8	66	-142.7	-912	1049.7	Eric Morand
STD	40	54	Devport AB	I	17	235.2	154.0	224	19.1	651	105.9	Nils Malmros
	41	38	EBAB i Stockholm AB	PM	17	215.4	213.9	119	-28.9	770	103.1	Kaarel Lehiste
STD	42	33	Atkins (SNC-Lavalin)	CE	17	213.1	264.6	219	2.5	624	93.4	Johannes Erlandsson
STD	43	41	Wingårdh Architects	A	17	211.1	178.6	166	15.4	1073	128.4	Gert Wingårdh
STD	44	55	Arkitekterna Krook & Tjäder (acquired Uulas Arkitekter) *	A	17	206.0	153.3	195	24.9	829	83.1	Johan von Wachenfeldt
STD	45	56	Liljewall Arkitekter AB	A	17	201.4	151.4	158	23.4	943	66.7	Per-Henrik Johansson Lamond
	46	42	Essiq AB	I	17/18	199.1	175.5	173	7.3	978	70.8	Jonas Sohtell

	2018	2017	Group	Service	Annual report	Turn-over MSEK	(Previous year)	Average number of employees	Profit after financial items MSEK	Added value/ empl. kSEK	Total balance sheet MSEK	CEO/Managing director
STD	47	47	Integra Engineering AB	PM.CE	17	193.1	167.5	164	32.0	1013	75.2	Kjell-Åke Johansson
	48	46	TechniaTranscat AB	I	17	192.6	169.3	96	19.2	1305	77.2	Jonas Gejer
STD	49	89	Ansys Sweden	I	17	188.5	85.7	24	7.9	1790	222.3	Richard Belcher
STD	50	40	Arkvision AB, fmr Mälarholmen (Ettelva Ark & M,E,R,) acquired Millimeter Ark *	A	17	184.7	187.3	148	61.5	698	269.1	Anders Lindh (Ettelva), Cecilia Bejden (M,E,R,), Jan Hardenborg (chairman Ettelva)
STD	51	45	Neste Engineering Solutions (fmr Neste Jacobs)	I	17	182.5	169.8	145	12.5	747	89.4	Marcus Andersson
STD	52	61	FOJAB AB	A	16/17	177.8	139.0	131	29.5	1163	72.0	Daniel Nord, Cecilia Pering (Fojab Arkitekter)
STD	53	52	Link Arkitektur AB	A	17	176.4	157.4	155	6.6	835	56.1	John Lydholm
STD	54	74	Engineeringpartner Automotive Nordic AB	I	17	175.7	112.7	153	16.0	783	76.9	Fredrik Blomberg
STD	55	48	i3tex AB	I	17	174.8	165.5	196	-1.9	677	63.2	Sara Lindmark
STD	56	73	AIX Arkitekter AB (annual report 18 months)	A	16/17	174.8	116.9	91	11.1	1318	74.9	Gunilla Persson
STD	57	49	FS Dynamics AB	I	17/18	167.1	160.3	165	10.1	796	57.9	Roger Blom
	58	64	Exact Svenska Mätcenter AB	CE. Enr	17	165.5	131.6	117	7.5	695	73.7	Peter Mikes
STD	59	44	Force Technology Sweden	CT	17	164.6	173.4	169	-22.7	661	100.2	Per Gelang
STD	60	63	HRM Engineering AB *	I	17	162.2	136.4	170	-76.9	631	88.5	Mats Rogbrandt
STD	61	51	Semrén & Månsson Arkitektkontor AB	A	16/17	159.1	142.8	156	11.1	711	209.1	Magnus Månsson (group CEO), Anders Erlandsson (Managing Director)
	62	66	Brandskyddslaget AB	M	17	158.5	127.9	92	31.6	1372	105.4	Martin Olander
STD	63	59	We Consulting AB	E	17	154.3	145.0	119	7.3	865	53.9	Mats Rönnlund
STD	64	58	Core Link AB	I	17	148.2	146.0	51	7.8	923	104.7	Jörgen Jensen
STD	65	84	Arkitema AB (acquired by COWI, Nov-18)	A	17	148.0	97.7	112	18.8	915	49.8	Jörgen Bach
STD	66	50	Midroc Project Management AB	CE.I	17	147.5	159.2	104	11.2	910	95.3	Stefan Kronman
STD	67	53	PQR International Group	M.E	17	143.6	154.8	132	13.2	827	51.4	Mikael Bisther
STD	68	62	Nyréns Arkitektkontor AB	A	17	139.9	138.3	97	-5.2	901	63.6	Ulrika Bergström
STD	69	72	Byggnadstekniska Byrån Sverige AB	CE	17	138.3	118.0	112	20.7	1000	66.0	Erik Löb
STD	70	60	INCOORD AB	M	17	135.7	144.1	91	19.9	1138	49.7	Tore Strandgård
STD	71	70	Segula Technologies AB	I	17	134.7	122.9	146	1.1	716	44.7	Henrik Nessér
STD	72	82	ÅWL Arkitekter AB	A	17	130.4	101.8	94	22.7	1059	61.3	Jacob Haas
STD	73	80	Riba koncernen AB	M.Enr	16/17	129.9	103.8	50	7.5	1000	57.4	Michael Lennse
STD	74	68	FVB Sverige AB	Enr	17	127.5	125.6	114	9.2	824	54.9	Leif Breitholtz
	75	76	T-Engineering AB	I	17	127.3	110.9	65	6.2	1475	52.5	Klas Lundgren
STD	76	69	Escenda Engineering AB	I	16	125.1	103.8	95	10.8	724	40.2	Nicholas Sale
STD	77	71	Geosigma AB	CE.Env	17	124.8	118.6	101	6.4	846	51.4	Per Aspemar
	78	77	QRTECH AB	I	17	121.9	109.4	80	5.7	913	50.8	Bengt Nordén
STD	79	87	Nitro Consult AB	CE	16/17	121.4	95.9	75	2.6	1078	174.6	Mats Blacker
STD	80	105	Archus AB	A	17	119.2	81.4	54	26.1	1363	59.4	Johnnie Pettersson
STD	81	65	Cactus Utilities & Rail *	I	17	118.1	130.7	68	-5.4	936	112.5	Fredrik Bergström, Elisabet Svensson
	82	57	Optronic Partner PR AB	I	17	113.5	146.7	56	16.1	697	88.8	Ulrik Stenbacka
STD	83	93	IKKAB (fmr Installation & Kraftkonsulterna)	M. CE. Enr	17	112.8	90.9	79	10.2	979	36.7	Stefan Svan
STD	84	94	Projektledarhuset i Stockholm AB	PM	17/18	111.9	88.3	54	7.0	1272	38.2	Örjan Kjellström
STD	85	75	VBK Konsult	CE	17	111.7	112.0	98	5.2	873	37.6	Ulf Kjellberg
	86	90	Teodoliten *	CE	17	109.0	94.0	79	15.4	824	63.6	Joakim Hixén
STD	87	79	Evomatic AB	E	16/17	106.3	81.2	54	0.4	669	54.2	Jonas Persson
STD	88	81	Brunnberg & Forshed Arkitektkontor AB	A	17	106.1	103.7	73	15.0	1268	36.0	Staffan Corp
STD	89	78	Condesign AB	I.E	17	104.1	107.3	121	4.7	658	45.5	Fredrik Bromander
	90	92	Technogarden Engineering	I	17	104.0	92.6	111	2.5	677	41.6	Stefan Lundin
STD	91	88	Havd Group	I	17	103.1	95.1	35	5.1	695	47.4	Björn Hedenberg
	92		KeyPlants AB	CE	17	102.9	50.8	23	14.6	1411	119.1	Jörgen Harrysson
	93	96	Iterio AB (acquired by Multiconsult)	CE	17	100.8	87.2	68	8.8	1066	34.1	Jonas Jonsson
STD	94	86	AcobiaFlux AB *	I	17	100.4	96.2	56	5.3	1008	36.6	Mikael Nilsson

STD = Member of the Swedish Federation of Consulting Engineers and Architects. (*) = lack of conforming figure/proforma/assumed – = missing figure
PM = Project Management, A = Architecture, CE = Civil/Structural Engineering, CT = Certification and testing, Env = Environment, Enr = Energy, E = Electrical, M = Mechanical/HEVAC, I = Industrial, MD = Multi Disciplinary

THE TOP 300 SWEDISH CONSULTING ENGINEERING AND ARCHITECTURAL GROUPS

(GLOBAL FIGURES ARE PRESENTED FOR SWEDISH GROUPS)

	2018	2017	Group	Service	Annual report	Turn-over MSEK	(Previous year)	Average number of employees	Profit after financial items MSEK	Added value/ empl. kSEK	Total balance sheet MSEK	CEO/Managing director
STD	95	101	Prose AB	I/CE	17	98.8	85.0	69	1.6	892	31.9	Anders Gymnander
STD	96	102	Helenius Ingenjörsbyrå AB	M	17	97.9	85.0	67	21.0	1093	39.5	Arne Wallström
STD	97	130	A & P Arkitektkontor AB	A	17	96.6	66.0	40	9.8	1082	38.0	Per Ahrbom
STD	98	107	Reflex Arkitekter (acquired PS Arkitektur)	A	17/18	93.6	81.0	71	15.7	962	35.9	Marco Testa
STD	99	177	C,F, Møller Sverige AB	A	17	93.3	47.5	47	4.3	731	22.1	Mårten Leringe
	100	95	TechRoi AB	I	17	92.6	87.3	71	-4.1	685	16.8	Tommy Christensen
STD	101	98	Byrån för Arkitektur & Urbanism (BAU)	A	17	91.8	85.8	69	9.9	962	34.0	Peter Walker
STD	102	123	TM-Konsult AB (with Collage Arkitekter) *	CE. I	16/17	90.8	68.8	88	9.2	827	47.3	Anders Franklin
STD	103	85	Elecosoft Consultec	A.CE	17	90.1	97.0	67	15.3	976	60.0	Anders Karlsson
STD	104	100	Bergsäker AB	CE	17	90.1	85.1	35	23.0	1626	60.0	Jörgen Sigvardsson
	105	132	Svensk Konstruktionstjänst AB	I	17	89.7	64.9	33	0.0	859	30.6	Johan Lantz
	106	113	Devex Mekatronik AB	I	17	88.5	76.1	102	7.6	702	26.8	Eric Boström
STD	107	127	Adiga AB	I	16/17	88.0	67.2	43	3.7	760	21.3	Ricardo Heras
STD	108	211	One Nordic (Konsult & Mätteknik) AB	I	17	87.4	38.9	97	3.1	538	148.4	Magnus Hasselgren
	109	119	Assign Group *	I	17	86.9	70.0	24	6.3	917	23.4	Stefan Svensson
STD	110	108	Conmore Ingenjörsbyrå AB	I	17	86.8	78.9	120	3.6	665	32.2	Andreas Svensson
STD	111	104	BSV Arkitekter & Ingenjörer AB	A.CE	17	86.7	82.0	72	18.9	962	46.3	Johnny Grauengaard
STD	112	144	Frankgruppen AB	PM.CE	17	86.0	59.3	47	11.5	1243	30.8	Magnus Trange
STD	113	110	BERGAB Berggeologiska Undersökningar AB	CE	17	85.5	78.7	68	7.9	944	36.1	Krister Jansson
	114	99	Veryday AB (fmr Ergonomidesign)	I	15/16	85.3	97.5	57	7.5	1033	72.5	Birgitta Sundén
STD	115	97	E&D Energijägarna & Dorocell AB *		17	84.0	86.7	17	8.2	1001	36.8	Jan Wikman
STD	116	128	Inhouse Tech *	PM.CE. Env	17	83.5	66.7	44	14.8	1307	31.0	Anders Sundberg
	117	117	App Start-Up AB	I	17/18	83.4	71.6	60	8.9	976	32.3	Anders Kallin
STD	118	67	Teamster AB	I	17	83.4	126.9	45	5.8	1045	33.5	Ulf Mill
	119	233	Hedström & Taube Gruppen	PM	17	83.4	34.9	44	16.1	1403	33.0	Jonas Rondin
STD	120	131	Centerlöf & Holmberg AB	CE	17	82.6	65.3	46	21.7	1252	44.1	Bengt Andersson
	121	592	Technity Group *	I	17	82.4	81.2	73	0.5	689	28.3	Thomas Winberg
STD	122	109	Cedervall Arkitekter	A	17	80.1	78.8	78	4.4	687	34.1	Björn Stillefors
	123	103	HOAB-gruppen *	PM	17	80.0	83.0	55	7.4	949	38.5	Thomas Liljenberg, Peter Svensson, Roger Nordin
STD	124	114	ELE Engineering AB	E	16/17	79.3	75.7	84	0.7	764	23.6	Henrik Eriksson
STD	125	111	Crabat AB	CE	16/17	78.6	72.0	31	3.6	1046	19.0	tf vd Christer Bergström
	126	120	Chematur Engineering AB	I	17	78.2	69.8	32	2.0	1330	98.8	Peter Olausson
	127	115	Strategisk Arkitektur Fries & Ekeroth AB	A	17	77.4	72.1	51	15.5	1118	29.9	Maria Börtemark
STD	128	121	BSK Arkitekter AB	A	17	77.1	69.7	56	6.2	983	32.8	Stina Ljungkvist
	129	160	ELVA Processautomation AB	M	17	76.7	53.3	12	9.7	1524	34.2	Mats Andersson
	130	155	Helm (Project Management & Systems) *	PM.CE	17	76.5	53.9	24	7.1	1188	32.0	Michael Johansson, Michael Claesson, Olof Cyrén
STD	131	162	Deva Mecaneyes AB	I	17	76.5	52.0	69	9.1	847	31.9	Magnus Welén
	132	116	Exengo Installationskonsult AB	M	17	75.6	71.6	55	9.6	1126	32.1	Christian Rolf
STD	133	126	Altair Engineering	I	17	75.2	67.5	33	1.6	1138	26.2	Håkan Ekman
	134	125	Tjuren Projektpartner AB	PM.M	17	73.6	67.9	33	18.7	1593	49.0	Niklas Haglund
	135	134	Brandkonsulten Kjell Fallqvist AB	M	17	72.7	64.6	40	16.9	1460	30.9	Anders Karlsson
	136	133	Wester+Elsner Arkitekter AB	A	17	72.7	64.7	46	10.4	1126	26.8	Fredrik Elsner
STD	137	180	Järnvågen AB (Bergström, BEKAB, Indautomat et al)*	I	17/18	69.2	46.8	37	8.5	928	35.0	Tord Hägglund (chairman)
STD	138	122	Equator Stockholm AB	A	17	68.7	69.4	50	10.8	998	32.2	Annica Carlsson
STD	139	83	Automations Partner i Helsingborg AB	I	17	68.1	100.0	33	-4.2	745	37.3	Peter Falkengren
	140	243	Berge Consulting AB	I	17	67.8	33.6	53	5.5	789	23.7	Klas Moreau
STD	141	170	Kåver & Mellin AB*	CE	17	67.6	49.6	45	8.9	797	46.0	Anders Hedberg
	142	217	Syntronic Production Services AB	I	17/18	66.8	37.8	29	1.5	543	56.0	Roger Lindholm
STD	143	150	NCS Colour AB	I	17	66.3	57.4	24	-0.3	1172	38.1	Elin Askfelt
	144	145	Pq Projektledning AB	PM	17/18	65.7	59.1	35	8.0	1325	27.8	Jonas Karlsson
STD	145	137	Andersson & Hultmark AB	M	17	65.6	61.7	57	12.4	967	40.4	Tobias Bodén

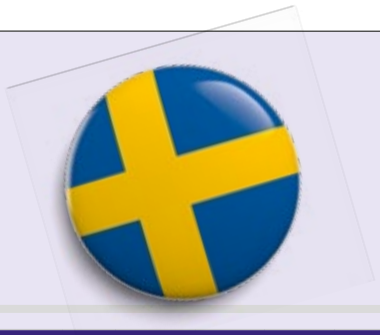
	2018	2017	Group	Service	Annual report	Turn-over MSEK	(Previous year)	Average number of employees	Profit after financial items MSEK	Added value/ empl. kSEK	Total balance sheet MSEK	CEO/Managing director
STD	146	118	Kadesjös Ingenjörsbyrå AB	CE.M	17/18	65.4	71.2	58	6.7	902	34.6	Birgitta Lindblad
STD	147	147	Envac AB	Env	17	64.9	58.6	12	25.7	3183	393.6	Joakim Karlsson
	148	141	Triathlon AB	I	16/17	63.0	59.8	55	7.1	680	32.8	Fredrik Wadsten
STD	149	169	Carlstedt Arkitekter AB	A	17	62.6	49.7	47	11.0	1012	46.6	Katarina Ringstedt
STD	150	218	Kanozi Sverige AB *	A	16/17	61.4	37.7	46	17.0	907	36.4	Johan Norén
STD	151	151	VAP VA-Projekt AB	Env	16/17	61.0	55.7	35	6.7	971	24.1	Mikael Melin
	152	152	Trivector Traffic AB		17	60.9	55.7	44	3.8	915	23.5	Christer Ljungberg
	153	588	Dry-IT AB	CE. PM	16/17	60.5	51.6	50	2.1	840	15.6	Jan Havik
STD	154	136	Citec AB	I	17	60.2	64.0	39	-2.2	801	16.1	Kenneth Lovidius
	155	129	Codesign Sweden AB	A	16/17	59.9	66.3	43	4.6	804	16.6	Ulrica O Magnusson
	156	179	MCA, Mission Consultancy Assistance Sweden AB	I	17	59.5	46.8	68	4.8	727	19.1	Pierre Ebenstein
STD	157	153	Systra AB (fmr Dalco Elteknik)		17	59.4	55.1	54	4.0	752	32.8	Bruno Susak
STD	158	165	MAF Arkitektkontor AB	A	16/17	59.3	50.4	38	6.8	979	33.6	Peter Häggmark
STD	159	163	High Vision Engineering Sweden AB	I	17	59.1	50.9	32	3.5	903	15.3	Peter Weston
STD	160	156	Fire Safety Design AB	M	17	58.7	53.8	48	6.0	996	23.0	Alf Johansson
STD	161	139	Tüv Nord Sweden AB	I	17	58.7	60.6	31	-3.6	1117	19.9	Anders Egerbo
STD	162	142	IKG Group AB	I	17/18	58.2	59.8	77	1.2	685	13.7	Magnus Ahlmark
STD	163	176	Scheiwiller Svensson Arkitektkontor AB	A	17/18	58.1	47.5	34	10.4	1186	24.5	Ari Leinonen
STD	164	149	TQI koncernen	M. PM. Env. Enr	16/17	58.0	58.1	42	10.3	993	30.5	Kenneth Thunvall
	165	138	StomKon (StomKonstruktioner Sverige AB)	CE	17	57.8	60.8	70	2.6	600	23.5	Terje Klovland
	166	182	Solvina AB *	I	16/17	57.5	44.7	30	4.8	916	62.1	Mikael Nyström
	167	140	Erfator Projektledning AB (Bravida)	PM.CE	17	56.9	60.2	14	3.2	1860	17.5	Sven Klockare
	168	196	Infrakonsult Sverige AB*	CE	16/17	56.1	41.0	28	10.7	1199	27.2	Aboudrar, Stenmark, Strand
STD	169	187	DHI Sverige AB	Env. M	17	53.8	43.6	32	1.2	857	23.7	Patrik Alm
STD	170	124	Bro Underhåll & Service BUS AB		16/17	53.8	68.8	29	7.9	881	24.3	Kent-Arne Svensson
	171	168	Orbicon AB	Env. CE	17	53.4	49.8	44	0.8	751	17.6	Åsa Malmäng Pohl
STD	172	241	Koteko AB *	I	17	53.0	34.1	32	5.1	1129	33.6	Lars Nyström
	173	112	IETV Elektroteknik AB	I	17/18	52.5	76.1	31	8.8	971	37.2	Krister Karlsson
STD	174	146	Cross Design AB	I	17	52.3	59.0	66	4.3	527	23.8	Tommy Bergh
STD	175	167	Rotpartner	CE	17/18	51.5	50.3	47	3.6	676		Fredrik Olsson
	176	174	Calambio Engineering AB	I	16/17	51.4	48.3	12	8.1	1791	24.7	Thomas Reidenfalk
STD	177	189	Calluna AB	Env	17	50.9	43.1	56	4.8	647	19.8	Håkan Ignell
STD	178	225	Okidoki AB	A	17	50.2	36.9	48	4.4	745	17.6	Rickard Stark
STD	179	200	SCIOR Geomanagement AB	CE	17	50.0	40.5	28	4.5	1018	22.5	Fredrik Landqvist
STD	180	191	BK Beräkningskonsulter AB	CE.I	16/17	49.9	42.6	38	3.6	1020	20.3	Tomas Carlsäng
STD	181	154	Electro Engineering koncernen AB	E	17/18	49.9	54.2	36	12.8	1213	23.7	Bo Andersson
STD	182	214	Enviroplanning AB	Env	17	49.2	38.5	17	0.6	936	15.7	Tony Johansson
STD	183	199	Lindberg Stenberg Arkitekter AB	A	17	49.2	40.6	40	8.9	971	20.8	Dag Lindberg
STD	184	223	Energi Funktion Komfort, Skandinaviska AB	I.Enr.PM	17	49.2	37.1	45	4.7	807	20.9	Mikael Lezdins
STD	185	173	SYD ARK Konstruera AB	A.CE	17/18	49.0	48.7	45	2.4	820	18.1	Jan Kluge
	186	178	Myvi Konsult AB	CE	16/17	48.6	46.9	47	5.7	876	19.3	Tommy Johansson
	187	175	Bylero AB	CE.PM	16/17	48.1	45.7	39	3.7	873	27.2	Torbjörn Frilund
	188	172	Jan Håkansson Byggplanering AB	CE.PM	17	47.9	48.7	22	7.5	1319	32.4	Anders Håkansson
STD	189	185	Mats Strömberg Ingenjörsbyrå AB	E	17	47.7	43.8	32	7.5	1072	22.1	Peter Granberg
STD	190	159	Yellon AB	A	17	47.7	53.3	46	0.4	781	21.1	Markus Leijonberg
STD	191	220	Xcub AB *	I	16/17	47.4	37.6	33	9.1	798	18.2	Mattias Aleniusson
STD	192	190	Sören Lundgren Byggkonsult AB	CE.PM	17/18	47.1	42.8	29	7.4	1347	17.4	Anders Harlin
	193	250	ABAKO Arkitektkontor AB	A	17	47.0	32.5	38	5.3	919	21.8	Olof Hellberg
STD	194	197	Projektbyggaren i Blekinge AB	PM.A	17	46.7	40.9	29	7.3	1236	24.7	Håkan Svensson
STD	195	192	Wikström AB	PM. CT. ENV.Enr.M	17/18	46.3	42.1	37	7.1	1040	21.0	Annika Aarthun
	196	207	Konsultgruppen Röda Tråden AB *	CE	16/17	46.0	39.1	0	0.4		12.7	Lars-Olof Gyllberg
	197	91	Aecom Nordic AB (Norden)	Env	16/17	45.8	93.0	21	-20.8	-249	14.4	Gert Vermeiren
	198	208	C&M Projekt i Stockholm AB	CE	17	45.6	39.1	25	5.8	1252	17.3	Krusbeth Kristensson

STD = Member of the Swedish Federation of Consulting Engineers and Architects. (*) = lack of conforming figure/proforma/assumed – = missing figure
PM = Project Management, A = Architecture, CE = Civil/Structural Engineering, CT = Certification and testing, Env = Environment, Enr = Energy, E = Electrical, M = Mechanical/HEVAC, I = Industrial, MD = Multi Disciplinary

THE TOP 300 SWEDISH CONSULTING ENGINEERING AND ARCHITECTURAL GROUPS

(GLOBAL FIGURES ARE PRESENTED FOR SWEDISH GROUPS)

	2018	2017	Group	Service	Annual report	Turn-over MSEK	(Previous year)	Average number of employees	Profit after financial items MSEK	Added value/ empl. kSEK	Total balance sheet MSEK	CEO/Managing director
	199	206	Kjellander & Sjöberg AB	A	16/17	45.3	39.5	48	5.3	751	14.0	Mi Inkinen
	200	183	Licab AB	CE	16/17	45.1	44.7	34	1.2	918	22.4	Andreas Andersson
	201	224	DinellJohansson AB	A	17	43.7	36.9	30	18.8	1246	44.6	Morten Johansson
STD	202	247	Svenska Teknikingenjörer AB *	I	16/17	43.3	33.1	35	4.8	771		Aderum, Sikström
STD	203	198	Smart Eye AB	I	17	43.2	40.7	54	-42.0	365	101.0	Martin Krantz
	204	278	Mitta AB	CE	17	42.3	28.3	44	-0.7	595	26.7	Tomas Knutsson
STD	205	221	DGE Mark och Miljö AB	Env	17	42.2	37.5	35	2.5	740	16.0	Johnny Sjögren
STD	206	193	Besiktningsföretaget Ansvarsbesiktning AB	CE	16/17	41.8	46.0	22	1.8	871	10.8	John Widmark
STD	207	158	EDAG Engineering	I	17	41.6	53.4	58	-78.1	519	68.2	Mats Rogbrant
	208	148	Clinton Mätkonsult AB	CE	16/17	41.6	58.1	28	3.5	889	14.1	Johan Nyström
STD	209	260	Trafikia AB	CE	17	41.5	31.3	20	0.5	874	21.1	Mats Hagström
	210	184	LMT Elteknik AB	I.E	16/17	41.4	44.0	31	2.7	883	15.9	Anders Engqvist
STD	211	202	STIBA AB	CE	17	41.3	40.2	28	11.2	1268	17.4	Joakim Österlund
	212	231	Conpal AB	CE	17	40.7	35.1	3	7.5	1890	18.6	Per Hansback
STD	213	245	EPG Projektledning AB	PM	17	40.6	33.3	33	4.6	835	14.6	Dennis Lundmark
	214	194	SweRoad AB	CE	17	40.4	41.4	15	-6.6	429	38.1	Stefan Arnersten
STD	215	166	P O Andersson Konstruktionsbyrå AB	M	17	40.3	50.3	18	14.5	1728	22.5	Mattias Kinhult
	216	219	Geoteam Nord AB	CE	17	40.0	37.6	16	0.2	889	11.7	Joachim Östergårds
	217	181	Addiva AB *	I	16/17	40.0	46.3	51	0.5	654	12.9	Björn Lindström
STD	218	213	Landskapslaget AB	A	17	39.9	38.7	31	3.3	895	14.2	Åsa Keane
STD	219	372	Bassoe Technology AB	I	17	39.9	17.7	38	-17.5	617	18.8	Acke Dahlman
STD	220	215	Arkitektgruppen G,K,A,K AB	A	17	39.8	38.2	31	4.1	849	12.8	Sundén, Skoog, Josefsson
	221	205	Creanova AB	M.Enr	16/17	39.6	39.7	31	12.1	1037	19.6	Jonas Dorsander
	222	201	KFS Anläggningskonstruktörer AB	CE.PM	16/17	39.4	40.3	29	0.5	1076	25.8	Patrik Påhlsson
STD	223	267	Metron Miljökonsult AB	Env	17	39.4	29.7	23	10.8	1170	28.3	Ann-Sofie Wessberg
STD	224	255	Looström & Gelin Konstruktionsbyrå AB	CE	17/18	39.0	31.9	29	6.7	1086	16.6	Björn Sjögreen
STD	225	157	Elajo Engineering AB	I	17	39.0	53.4	49	3.3	660	10.2	Matiias Åberg
STD	226	228	Alessandro Ripellino Arkitekter	A	17	38.9	36.5	36	11.2	936	19.8	Alessandro Ripellino
STD	227	269	Elektrotekniska Byrån konsult i Sverige AB	E.I	16/17	38.7	29.6	31	2.1	695	17.9	Jonas Bjuresäter
STD	228	239	Erséus Arkitekter AB	A	17	38.7	34.4	30	3.7	967	15.4	Peter Erséus
STD	229	226	Thomas Eriksson Arkitektkontor AB	A	17	38.4	36.6	26	0.8	866	10.6	Thomas Eriksson
	230	171	Deltatec AB	I	17	38.4	49.6	14	3.8	1024	12.0	Patrik Storm
	231	237	B & B, Bro & Betong Projektledning	CE.PM	16/17	37.9	34.6	22	9.5	1280	17.3	Magnus Tengblad
STD	232	308	KUB Arkitekter AB	A	16/17	37.6	24.2	28	11.2	1134	21.0	Per-Erik Persson
	233	188	DAP Stockholm	A	17	37.2	43.4	16	-1.8	754	17.1	Anna Wrangel Möller
	234	234	Provinn AB	I.CT	17/18	37.1	34.8	15	3.5	1142	11.7	Per-Olof Bergström
STD	235	216	MoRe Research Örnsköldsvik AB	I	17	37.0	37.9	45	-0.4	593	22.8	Stefan Svensson
STD	236	258	Säkerhetspartner Norden AB	CE	16/17	36.9	31.5	26	7.9	1101		Leif Nyström
STD	237	262	Contekton Arkitekter Fyrstad AB	A	16/17	36.9	31.0	31	11.3	1052	17.5	Peter Bergmann
STD	238	244	EKM kontroll AB	M	16/17	36.7	33.4	23	0.3	728	10.3	Per Liljekvist
	239	257	S-Tech, Skandinaviska Tech AB	E	17	36.7	31.6	38	4.1	729	9.4	Martin Jansson
STD	240	594	Inocean AB	I	17	36.7	113.1	19	-5.0	917	9.8	Björn Fagerström
STD	241		Loxia Group	PM	17	36.7	24.8	8	3.6	1063	19.2	Joakim Holtböck
STD	242	232	Ca Consultadministration AB	PM	17	36.4	35.0	30	1.4	1018	17.0	Daniel Dåverhög
STD	243	204	SEVAB (Styr- och Elinstallationer Väst Teknik)	I	16/17	36.3	39.7	26	0.8	722	25.5	Mikael Svensson
STD	244	259	Fredblad Arkitekter AB	A	16/17	36.3	31.4	33	6.9	917	13.0	Leif Jönsson
STD	245	212	Energi & Miljöteknik i Göteborg AB	E.M	16/17	36.3	38.9	14	4.4	991	12.6	Andreas Frigård
	246	106	Fiber Network Consulting AB	I/CE	17	36.2	81.3	32	-6.0	608	17.1	Thomas Andersson
	247	404	Wiretronic AB	I	17/18	35.9	14.5	20	1.8	1020	24.3	Sören Karlsson
	248	135	Camatec Industriteknik AB	I	17/18	35.4	64.5	36	2.1	726	13.0	Johan Ljungner
	249	186	Validus Engineering	I	17	35.4	43.7	23	2.6	796	18.5	Åke Burman
STD	250	264	Arkitektbyrån Design Göteborg AB *	A	17	35.3	30.0	27	7.0	880	18.2	Jan Åkerblad
	251	203	HillStatik AB	S.CE	17	35.1	40.2	19	12.6	1426	20.2	Conny Höggren
	252	310	Mårtensson Consulting		16/17	35.1	24.1	25	5.8	937	24.1	Nils Mårtensson
STD	253	230	Rockstore Engineering AB	CE	17	35.0	35.5	16	5.3	1384	17.0	Krister Knutsson



	2018	2017	Group	Service	Annual report	Turn-over MSEK	(Previous year)	Average number of employees	Profit after financial items MSEK	Added value/ empl. kSEK	Total balance sheet MSEK	CEO/Managing director
STD	254	229	TEAM TSP Konsult AB	E	17	34.9	36.0	22	5.4	1330	15.8	Mattias Hernegran
	255	248	Protek Development Sweden AB *	PM.CE	17	34.8	33.1	23	3.5	1005	12.9	Pär Eriksson
STD	256	235	Landskapsgruppen AB	CE	16/17	34.7	31.8	30	4.0	880	15.0	Ulf Rehnström, Tomas Hagström
STD	257	238	Projectpartner AB *	PM	17	34.6	34.5	19	7.4	1180	25.2	Joacim Öhman
STD	258	261	Ingenjörsbyrå Forma	I	17/18	34.3	31.0	27	3.4	790	16.0	Anders Grahm
STD	259	276	Varg Arkitekter AB	A	16/17	33.6	28.7	24	10.2	1225	18.0	Inga Varg
STD	260	294	Elinder&Sten Arkitekter AB	A	16/17	33.5	26.1	19	7.7	1224	14.9	Christian Elinder
	261	284	Scanscot Technology AB	CE	17	33.4	28.0	14	6.0	1414	26.5	Johan Kölfors
STD	262	263	Metod Arkitekter i Uppsala AB	A	17	33.3	30.4	23	4.8	945	13.5	Patrik Tammerman
	263	236	Infrapartner AB	CE	17	33.3	34.6	14	4.1	1520	13.9	Marcus Sundberg
STD	264	273	Atrio Arkitekter (Jönköping, Kalmar, Västervik & Stockholm) *	A	17	33.2	29.0	29	4.0	726	16.9	Lunde, Bohlin, Spaak, Karlsudd
STD	265	300	Arkitekter Engstrand och Speek AB	A	16/17	32.9	25.0	20	8.6	1077	18.0	Olle Dahlkild
	266	281	A & J Andersson & Jönsson Landskaps-arkitekter AB	A	17/18	32.8	28.3	21	4.7	915	12.6	Anders Jönsson
STD	267	265	Studio Stockholm Arkitektur AB	A	17	32.8	29.8	22	9.9	1128	22.4	Alessandro Cardinale
	268	286	Elkonsulten i Finspång AB	E	16/17	32.6	27.2	12	4.4	1335	14.6	Bengt Hillier
	269	590	Byggkoordinator AB *	CE. PM	17	32.2	20.3	26	1.8	929	10.0	Kullberg, Nyberg, Sühl
	270	323	Tham & Videgård Arkitekter AB	A	17	32.2	22.9	10	11.0	2582	21.3	Bolle Tham (chairman)
	271	254	Oxyma Innovation AB	I	16/17	32.1	31.9	23	2.8	856	5.9	Johan Norelius
STD	272	280	Creacon Halmstads Konsult AB	CE	17	32.0	28.3	34	0.8	727	10.6	Torbjörn Åkesson
	273	282	Karlander Konsult AB	CE	16/17	31.9	28.0	18	0.8	912	7.5	Fredrik Karlander
	274	222	Projektlots i Sverige AB		17/18	31.5	37.4	1	0.1	790	9.6	Astrid Evang
STD	275	268	AG Arkitekter AB	A	17	31.1	29.6	23	6.7	1121	15.1	Fredrik Kihlman
STD	276	301	Utopia Arkitekter AB	A	16/17	30.8	24.9	20	5.3	1125	11.6	Emma Jonsteg
	277	251	Stockholms VVS-Kompetens AB	M	17/18	30.6	32.5	13	6.3	1585	16.5	Håkan Klaesson
	278	253	Rstudio for architecture AB (2 companies) *	A	17/18	30.4	32.2	24	4.6	876	15.2	John R, Johanson
	279	333	Apocca AB	I	17	30.3	22.2	13	1.6	1040	14.9	Alexander Andersson
STD	280	249	HMXW Arkitekter AB	A	17	30.1	33.0	22	4.5	965	16.2	Ragnar Widegren
	281	256	Projektledarbyrån i Sverige AB *	PM.CE	16/17	30.1	31.8	17	3.9	1229	8.7	Roland Appelgren
STD	282	274	Terratec Sweden (fmr Blom Sweden)	I.Geo	17	29.2	28.8	11	0.2	890	13.7	Ante Erixon
STD	283	161	BBH Arkitektur & Teknik AB	A.CE	17	28.9	52.9	26	-4.6	550	9.6	Olle Bertfelt
STD	284	307	Projektinriktad Forskning och Utveckling i Göteborg AB	Enr. Env	16/17	28.9	24.2	16	8.3	1421	17.4	Håkan Sköldberg
STD	285	252	Ingenjörsfirma Mats Bergstedt AB	I	17/18	28.8	32.2	20	0.3	894	16.2	Mats Bergstedt
	286	296	Projektidé i Uppsala AB	PM	16/17	28.7	25.8	16	4.9	1327	12.4	Henrik Billing (chairman)
STD	287	287	pidab AB	I	17/18	28.6	26.8	23	0.7	853	10.8	Per Forsbring
STD	288	279	Marge Arkitekter AB	A	17	28.5	28.3	25	4.7	909	10.9	Louise Masreliez
	289	339	Consultive Västerås AB	I	17	28.4	21.9	26	2.8	871	10.1	Tobias Bäckström
	290	285	AK-Konsult Indoor AIR AB	Env	17	28.3	27.9	21	1.7	969	10.3	Thomas Perman
STD	291	271	Seveko VVS Konsult AB	M	17	28.3	29.3	20	6.6	1211	11.1	Henrik Sandén
	292	275	Rundquist Arkitekter AB	A	17	28.3	28.7	23	3.1	820	12.4	Henrik Rundquist
STD	293	303	Radar arkitekt & planering AB	A	17	28.2	24.6	31	2.6	707	11.9	Oskar Götestam
STD	294	277	Mekaniska Prövningsanstalten MPA AB	M	17	28.0	28.6	16	4.4	1423	10.0	Torbjörn Ohlsson
	295	340	Incontext AB	I	16/17	27.8	21.8	33	3.9	789	19.9	Matti Schvili
	296	374	Creo Dynamics	I	17/18	27.8	26.5	21	-0.2	1062	9.0	Magnus Titus
STD	297	227	A-Way Consulting	I	17	27.7	36.6	25	-1.8	761	9.8	Kent-Åke Johansson
STD	298	240	Knut Jönson Ingenjörsbyrå AB (gruppen) *	CE	17/18	27.6	34.2	21	9.5	996	68.9	Per Arne Näsström
STD	299	266	Knut Jönson Byggadministration	PM	17/18	27.6	29.7	10	6.3	1586	10.8	Tom Ågstrand
STD	300	292	AB Arkitektlaget Skåne	A	17	27.6	26.4	22	5.3	971	11.7	Lars Bourdette

STD = Member of the Swedish Federation of Consulting Engineers and Architects. (*) = lack of conforming figure/proforma/assumed – = missing figure
PM = Project Management, A = Architecture, CE = Civil/Structural Engineering, CT = Certification and testing, Env = Environment, Enr = Energy, E = Electrical, M = Mechanical/HEVAC, I = Industrial, MD = Multi Disciplinary

“ICELAND HAD THE BEST PROFITABILITY IN THE NORDIC REGION IN 2017 WITH A PROFIT MARGIN OF 9.3%.

Bølgen (the wave) is a modern block of apartments in Vejle, Denmark. Designed by Henning Larsen Architects.

THE NORDIC MARKET

The Nordic section of the Sector Review is produced in collaboration with our colleagues in Denmark, Norway, Finland and Iceland. FRI gives an account of developments on the Danish market, and RIF and Arkitektbedriftene (The Association of Consulting Architects in Norway) present developments on the Norwegian market. SKOL (engineering consultants and architectural firms) present the Finnish market. The Icelandic market is presented by FRV and SAMARK together.

Comparison of key business ratios

Below, a comparison is made between some of the key business ratios for the Nordic countries. The figures are calculated on the basis of the lists that were compiled for the respective countries and using the figures that have been made available. The Swedish figures thus represent the 300 largest groups in Sweden. In Denmark, Norway and Finland they represent the 100 largest companies. On Iceland, the figures apply to the 20 largest companies. The calculaations have been made on the basis of the exchange rates over the period January up to and including November 2018, as shown at the top of the graph below.

Development in the Nordic countries was good during 2017. The turnover per employee increased in all countries except Finland, where it remained unchanged. The highest turnover per employee was recorded among the Icelandic firms, with EUR 150 000 per employee. Then came Norway with EUR 145 000 /employee, Denmark with EUR 129 000/employee, Sweden with EUR 127 000/employee and Finland with EUR 103 000/employee.

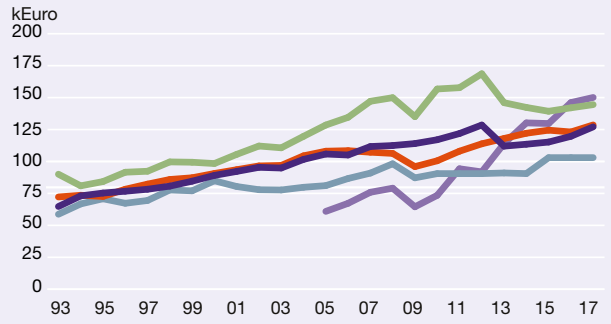
The level of profitability, measured as the result after financial items, (EBT), rose in Finland (7.1% in 2017 compared with 5.0% in 2016) and on Iceland (9.3% versus 8,9), but weakened in Denmark (3.9% versus 4.6%) and Norway (5.7% versus 6.9%). In Sweden, it remained in principle unchanged (7.1% versus 7.2%). The profit margins are presented in the graph below. A better measure of profitability is perhaps the operating result, which indicates the difference between income and expenditure before inter-

Nordic comparison of key figures

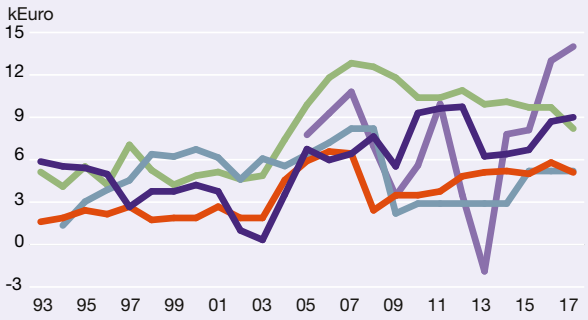
The figures are calculated with the conversion rates below, representing average currency rates for the period January–October 2018.
1 Euro = 10.2509 SEK 7.45128 DKK 9.5792 NOK 125.40 ISK Previously 1 Euro counted as: 5.9457 Mark

Sweden Denmark Norway Iceland Finland

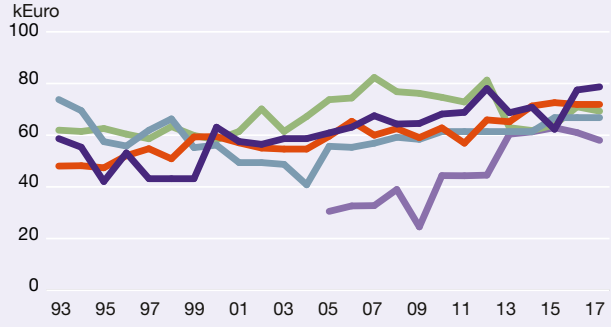
Turnover/employee



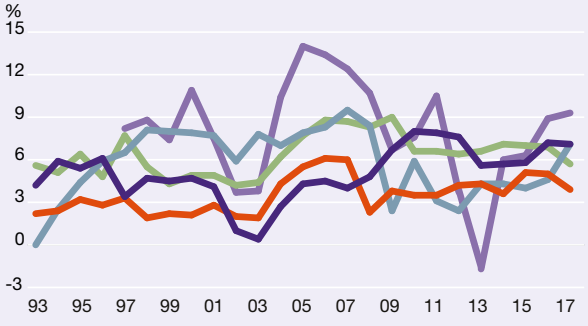
Profit after financial items/employee



Total assets/employee



Profit margin



> SWECO IS THE LARGEST GROUP IN THE NORDIC REGION WITH OVER 10,000 EMPLOYEES WITHIN THE REGION.

est and taxes. In Sweden it is most often calculated after depreciation, whereas in other countries it is usually calculated before depreciation (EBITDA). The operating margin, (EBITDA), was higher than the profit margin (EBT) in all countries except Norway and Iceland. The Swedish market recorded the highest operating margin with 9.2% (8.7% in 2016). This was followed by Iceland with 9.0% (11.7%), Finland with 8.9% (6.9%), Denmark with 6.4% (7.2%) and Norway with 5.7% (6.6%).

Globalisation in the Nordic area

Globalisation in the sector has been intensive for many years, which has resulted in increasingly rapid consolidation with larger groups as a consequence. The large Nordic engineering and industrial consulting groups have become increasingly large both on the domestic market as well as in the adjoining neighbouring countries and outside the Nordic area. Furthermore, consolidation has also been accompanied by a trend towards the greater integration of different operations. Industrial consultants and engineering consultants in the building and civil engineering segment are growing closer to each other, and in recent years architects have become integrated to a greater extent and improved the overall services that are offered to clients.

Globalisation and consolidation are accompanied by changes, or are a result of the changes that are taking place in the world around us, coupled with increasing digitalisation. Digitalisation

When completed in March 2019, Mjøsa Tower in the Norwegian town of Brumunddal will be the world's tallest wooden building. Sweco is providing consulting services in structural engineering, fire engineering and acoustics.

INTERVIEW
MICKEY JOHANSSON
COO, WSP SWEDEN

“COMPLEX URBAN AND RURAL DEVELOPMENT CREATES **A GREATER NEED FOR BOTH ANALYSIS AND MANAGEMENT SERVICES**

How would you describe briefly the services that are offered by WSP's business areas Advisory and Management?

Business Area Advisory provides analyses and strategic advice in connection with societal development. It could be a question of regional development issues, the benefits of investments in infrastructure to society or in the case of the project entitled “Framtidens tog” (train of the future) on behalf of DSB, Danish State Railways, where we are concerned with providing engineering and administrative advice on the future train fleet. Business Area Management supplies project management and project control functions for our clients' project – but to an increasing extent also for the company's multidisciplinary assignments.

How would you describe developments within the sector for engineering consultants today compared with ten years ago?

On the built environment side, it is the fact that the engineering consultants – as the name suggests – have grown from being merely engineering consultants to becoming built environment consultants and are now well on the way towards becoming building development consultants. Historically, the focus was directed more clearly on every conceivable technical discipline in the project implementation stage. Subsequently, the sector has been developed with more services in

Mickey Johansson, COO WSP Sweden

analysis, surveying, planning, coordination and management. To start with, these services were developed not only closer to the actual construction process but also towards wider social issues. With this in mind, it was still the case that engineering know-how continued to be a heavy and strong platform for the services offered by the consultants.

I have the feeling that the management and analysis areas in the sector have grown. Do you feel the same way? What then is the reason for this in your opinion?

Absolutely. If we look at the assignments carried out by WSP Sweden, this part of the work has increased from around ten per cent in the past to at least 20 per cent today. I have the impression that several of the major companies are experiencing a similar trend. If we take a separate look at the analysis part, I would say that these activities were largely non-existent fifteen years ago. At least among the larger companies.

Basically, of course, there is a demand from the market. The situation is helped by the insight that those projects which fail to succeed are often the result of deficient management and direction. Another factor is the higher level of complexity. If we take sustainable development seriously, it means that social development and individual projects must be conducted with more of a fact-based system perspective. This is a complex situation. It means that there is a need for both a broader and deeper competence plus roles/functions to keep the whole structure together. Another example is infrastructure development. If we construct a railway it is not merely a question of building just a railway. Infrastructure development is associated with a complex system of rural and urban development. It also creates basic input and a need for both analysis and management services.

What are the trends in the sector now and in the future – let us say over the next five years?

If I stay within the management and analysis sector, I think that the engineering consultants will continue to develop their skills and the services they offer in the area. The market does have demands and in my opinion the knowledge base on which the engineering consultants stand means that we probably have a very good chance of taking on roles that, for example, accounting and exclusively management firms have traditionally held. Today I would say that the engineering consultants are in the forefront when it comes to making current situation analyses but can be developed to take on the role of supporting clients in developing goal scenarios and in helping to achieve them.

WSP operates in a global context with 50 000 personnel all over the world. If I consider the work of my colleagues in other countries, I can see that the consultants in Sweden supply services for our clients' projects, while my colleagues in other parts of the world play a much more extensive and leading role in the more far-reaching programmes. Programmes that span over a large number of projects. One example is WSP's role in California High Speed Rail. WSP is integrating and directing the programme, and has a manning strength that accounts for the majority of the overall manning of the authorities. We will perhaps not see exactly the same structure here, but I believe we can begin to see a scenario whereby it is possible in some way to delegate greater programme responsibility in Sweden too.

The engineering consultants will of course be affected by mega trends such as digitalisation, urbanisation and the consequences of climate change. If there is one field in which I believe engineering consultants will be well equipped to contribute, it is that of climate change. In this context there is a significant amount of factual knowledge, survey capacity and implementation ability. It is perhaps the single most important issue for the engineering consultants to focus on.

provides the opportunities to make effective use of the resources that are widely distributed geographically within the same group and to benefit from national and regional cutting-edge skills that Kaj Möller, from Sweco International, mentions in his interview later in the review. The greater complexity in projects and between systems also requires increased breadth and depth in terms of pure competence, and larger investments in our own processes, systems and software, which Mikael Vatn, Etteplan, points out in his interview. The globalisation and consolidation trends have also led to the emergence of analysis services linked to developments in society. Mickey Johansson, COO of WSP Sweden, notes that this operational area did not in principle exist 15 years ago. In recent years, the development of analysis departments in the major groups has increased rapidly. This is a consequence of greater demand from the market, which quite simply requires both more efficient management in projects and earlier analyses linked to the in-

creasing level of complexity in societal development.

Together with the prevailing trends, business models are also being developed. Mikael Vatn talks about how industrial consultants and engineering consultants can learn from each other and from the architects. The sector is quite simply en route towards becoming more business oriented, which is something that comes out in almost all the interviews reported in this review. Tore Strandgård from Incoord emphasises the importance of ensuring they are remunerated for their services in relation to the value they provide rather than for a certain number of hours. Consultants need to be better at telling clients what they can supply and at selling innovations.

In order to illustrate what globalisation and consolidation look like in a Nordic perspective, we introduce in this review a table of the largest groups in the Nordic area and how they are distributed throughout the Nordic countries. The list of the ten largest groups reinforces the picture of how a Nordic rather than a national domestic market has gradually emerged during recent years. It is also interesting to observe that only one group from outside the Nordic area has found its way on to the top ten chart of the largest groups in the Nordic area, namely WSP. So even though globalisation has to a very great extent changed the appearance and ownership pattern on the Nordic markets, the largest players are still regional.

Sweco is the largest consultancy in the Nordic area with a little over 10 000 employees within the region from among a total of just under 15 000. ÅF is the second largest with just over 8 500 employees (from a total of just over 9 600), followed closely by Ramboll with a little over 8 000 employees in the region and just over 12 500 employees globally.

10 LARGEST GROUPS IN THE NORDIC REGION

	Group	Country	Services		Employees	Turnover MEUR	(Employees, globally)	(Turnover MEUR, globally)
1	Sweco	Sweden	MD/CE	**Nordics**	**10092**	**1 216**	14849	1 688
				Sweden	5526	685		
				Finland	1865	175		
				Norway	1694	211		
				Denmark	1007	145		
2	ÅF	Sweden	MD/I	**Nordics**	**8549**	**1 144**	9646	1 273
				Sweden	7175	941		
				Norway	724	120		
				Denmark	513	58		
				Finland	137	24		
3	Ramboll	Denmark	MD/CE	**Nordics**	**8037**	**954**	12527	1 449
				Denmark	2719	355		
				Finland	2237	206		
				Sweden	1582	212		
				Norway	1499	181		
4	COWI	Denmark	MD/CE	**Nordics**	**7125**	**828**	7104	881
				Denmark	4689	548		
				Norway	1236	139		
				Sweden	1200	141		
5	WSP	Canada	MD/CE	**Nordics**	**6613**	**690**	42000	4 532
				Sweden	4782	557		
				Norway	1151	76		
				Finland	680	57		
6	**Norconsult**	Norway	MD/CE	**Nordics**	**3132**	**394**	3300	490
				Norway	2400	333		
				Sweden	627	47		
				Denmark	105	14		
7	Multiconsult	Norway	CE	**Nordics**	**2510**	**310**	2851	352
				Norway	2270	274		
				Sweden	155	17		
				Denmark	85	18		
8	Sigma Group	Sweden	MD/I	**Nordics**	**2388**	**286**	3317	343
				Sweden	2364	282		
				Finland	16	3		
				Norway	8	1		
9	Etteplan	Finland	I	**Nordics**	**2259**	**190**	2802	216
				Finland	1814	147		
				Sweden	445	43		
10	NIRAS	Denmark	CE	**Nordics**	**1963**	**265**	2206	292
				Denmark	1708	202		
				Sweden	163	41		
				Finland	46	15		
				Norway	46	7		

The figures are calculated with the conversion rates below, representing average currency rates for the period January–October 2018. 1 Euro = 10,2509 SEK 7.4513 DKK 9.5792 NOK 1.5319 CAD

THE TOP 50 NORDIC ARCHITECTURAL GROUPS

	2018	2017	Group	Country	Annual Report	Employees	(Previous year)	Turnover	Currency	Turnover MEUR
STD/RIF/FRI/SKOL	1	3	Sweco Architects (incl. Årstiderna Ark)	SWE	17	1096	629	1408.0	MSEK	137.4
FRI/STD/RIF	2	1	Rambøll Architects & Urban Planning *	DAN	17	800	835		MDKK	
STD/AB	3	2	White Architects	SWE	17	680	682	918.7	MSEK	89.6
STD	4	4	Tengbom group (acquired Werket Arkitekter) *	SWE	17	677	603	705.6	MSEK	68.8
RIF/AB/STD	5	6	LINK Arkitektur AS	NOR	17	486	372	488.8	MNOK	51.0
STD	6	5	Arkitema (COWI)	DAN	17	477	466	391.2	MDKK	52.5
RIF/STD/FRI	7		Norconsult Arkitektur (incl. Monarken) *	NOR	17	346	265	422.0	MNOK	44.1
	8	9	Henning Larsen Architects	DAN	17/18	288	275	279.4	MDKK	37.5
	9	8	C.F. Møller Architects	DAN	17	286	297	304.1	MDKK	40.8
	10	20	ÅF (SandellSandberg, Koncept Sthlm, Gottlieb Paludan) *	SWE	17	278	109	399.1	MSEK	38.9
STD	11	11	Tyréns (incl. Pyramiden & AQ arkitekter) *	SWE	17	250	230	250.0	MSEK	24.4
AB	12	12	Snøhetta Group *	NOR	17	240	180	205.4	MNOK	21.4
STD	13	10	PE Arkitektur, incl. Temagruppen & Novamark	SWE	17	229	237	295.5	MSEK	28.8
	14	7	BIG / Bjarke Ingels Group *	DAN	17	216	300	332.5	MDKK	44.6
STD	15	15	Arkitekterna Krook & Tjäder AB	SWE	17	195	137	206.0	MSEK	20.1
AB	16	18	Nordic Office of Architecture *	NOR	17	179	134	225.0	MNOK	23.5
STD	17	14	Wingårdh group	SWE	17	166	141	211.1	MSEK	20.6
STD	18	16	Liljewall Arkitekter AB	SWE	17	158	136	201.4	MSEK	19.6
STD	19	13	Semrén & Månsson Arkitektkontor AB	SWE	16/17	156	156	159.7	MSEK	15.6
STD	20	29	Arkvision AB, fmr Mälarholmen (Ettelva Arkitekter & M.E.R. Solution)	SWE	17	148	84	184.7	MSEK	18.0
STD	21	22	FOJAB AB	SWE	17	131	105	177.8	MSEK	17.3
	22	19	Schmidt Hammer Lassen Architects K/S *	DAN	17	120	112	138.5	MDKK	18.6
	23	26	Vilhelm Lauritzen AS	DAN	17	109	93	98.2	MDKK	13.2
	24	21	Erik Arkitekter (fmr KPF Arkitekter)	DAN	17	99	107	86.7	MDKK	11.6
	25	70	SLA Arkitekter A/S *	DAN	17	98	46		MDKK	
STD	26	23	NYRÉNS Arkitektkontor AB	SWE	17	97	100	139.9	MSEK	13.6
STD	27	32	ÅWL Arkitekter AB	SWE	17	94	79	130.4	MSEK	12.7
STD	28	28	AIX Arkitekter AB	SWE	16/17	91	84	174.8	MSEK	17.1
	29	30	Mangor & Nagel A/S	DAN	17	87	82	68.9	MDKK	9.2
	30	35	COBE ApS	DAN	17	86	74	75.0	MDKK	10.1
	31	37	3XN A/S	DAN	17/18	85	73	129.9	MDKK	17.4
	32	25	PLH Arkitekter AS	DAN	17	81	93	88.8	MDKK	11.9
AB	33	36	Lpo Arkitekter As	NOR	17	80	74	92.3	MNOK	9.6
STD	34	31	Cedervall Arkitekter	SWE	17	78	79	180.1	MSEK	17.6
	35	27	JJW Arkitekter A/S *	DAN	17	77	85	59.7	MDKK	8.0
	36	33	DARK Group *	NOR	17	77	75	93.0	MNOK	9.7
AB	37	56	Tag Arkitekter AS	NOR	17	75	52	72.8	MNOK	7.6
STD	38	38	Brunnberg & Forshed Arkitektkontor AB	SWE	17	73	70	106.4	MSEK	10.4
	39	40	Tegnestuen Vandkunsten ApS	DAN	17	72	66	92.4	MDKK	12.4
STD	40	43	BSV Arkitekter & Ingenjörer AB	SWE	17	72	61	86.7	MSEK	8.5
	41	41	Pes-Arkkitehdit Oy (Pekka Salminen)	FIN	17	71	64	7.7	MEUR	7.7
STD	42	52	Reflex Arkitekter AB	SWE	17/18	71	54	93.6	MSEK	9.1
STD	43	45	Byrån för Arkitektur & Urbanism (BAU)	SWE	17	69	58	91.8	MSEK	9.0
	44		Dorte Mandrup Arkitekter A/S	DAN	17	68	46	60.2	MDKK	8.1
	45	44	MAD Arkitekter *	NOR	17	66	59	71.2	MNOK	7.4
	46	39	CUBO Arkitekter A/S	DAN	17/18	64	66	94.1	MDKK	12.6
	47	58	Lundgaard & Tranberg Arkitekter A/S	DAN	16/17	63	52	126.0	MDKK	16.9
	48	42	Rubow Arkitekter A/S	DAN	17	62	61	58.1	MDKK	7.8
	49	51	Kullegaard Arkitekter A/S	DAN	16/17	62	55	62.4	MDKK	8.4
	50	57	Arcasa Arkitekter AS	NOR	17	62	52	115.3	MNOK	12.0

(*) = lack of conforming figure/proforma/assumed – = missing figure

AB = Member of Arkitektbedriftene, Norway. FRI = Member of FRI, Denmark. RIF = Member of RIF, Norway.
SKOL = Member of SKOL, Finland. STD = Member of STD-företagen, Sweden.

MORE GLOBAL GROWTH FOR DANISH CONSULTING ENGINEERING COMPANIES AS GROWTH IN THE DANISH MARKET IS SLOWING DOWN

In 2017, the Danish consulting engineering industry's revenue increased slightly from EUR 1.77 billion (DKK 13.2 billion) in 2016 to EUR 1.78 billion (DKK 13.3 billion) in 2017, a mere 0.6 percent increase. The average profit margin (EBIT) for consulting engineering companies was 6.7 percent, thus a decrease from 2016 where the profit margin concluded at 7.1 percent. However, the industry has consistently for five years achieved a profit margin higher than 6 percent for 5 years. This is a historic level of profitability.

Looking at the industry from a global perspective, exports account for 19.8 percent of the revenue in 2017, an increase from 18.7 percent in 2016 and 17.4 percent in 2015, hence the global market represents an increasingly bigger share of the Danish consulting engineering companies' total portfolio. Moreover, the international subsidiaries of consulting engineering companies with a Danish HQ improved their revenue by 2.5 percent in 2017 as revenue increased from EUR 1.57 billion (DKK 11.7 billion) in 2016 to EUR 1.61 billion (DKK 12.0 billion) in 2017.

In total, the Danish consulting engineering firms generated EUR 3.39 billion (DKK 25.3 billion) in global revenue in 2017, compared to EUR 3.33 billion (DKK 24.9 billion) in 2016, a 1.3 percent increase in global revenue, mainly due to an increase in exports and in revenue generated by international subsidiaries. Revenue generated by exports and in foreign subsidiaries accounts for 57.9 percent of global revenue in the industry. Danish consulting engineering firms employed approximately 27,600 staff globally, of which 14,800 staff were employed in foreign subsidiaries and 12,800 staff were employed in Denmark. A different perspective of the internationalisation of the Danish consulting engineering industry is that international firms, with HQ outside Denmark, have an increasing presence in the Danish market, Sweco, Atkins (SNC-Lavalin) and Norconsult being the three largest in the Danish market.

Outlook

Overall the Danish economy is in good shape. The Danish Ministry of Finance expects GDP to grow by 1.8 percent in both 2018 and 2019. Residential investments are expected to rise by 7.0 percent in 2018 and 5.4 percent in 2019. In recent months, the expectations for 2019 have been adjusted downward in the government's "Economic Statement" due to stricter regulation on loan financing. Business investments are expected to increase to a historic high of 8.5 percent in 2018 caused by some big one-time investments within the shipping industry. This is followed by a substantial decrease to 2.2 percent in 2019. As public investments have been historically high in the past years, significant declines in public investments are expected in coming years: 3.4 percent of GDP in 2018 and 3.5 percent of GDP in 2019.

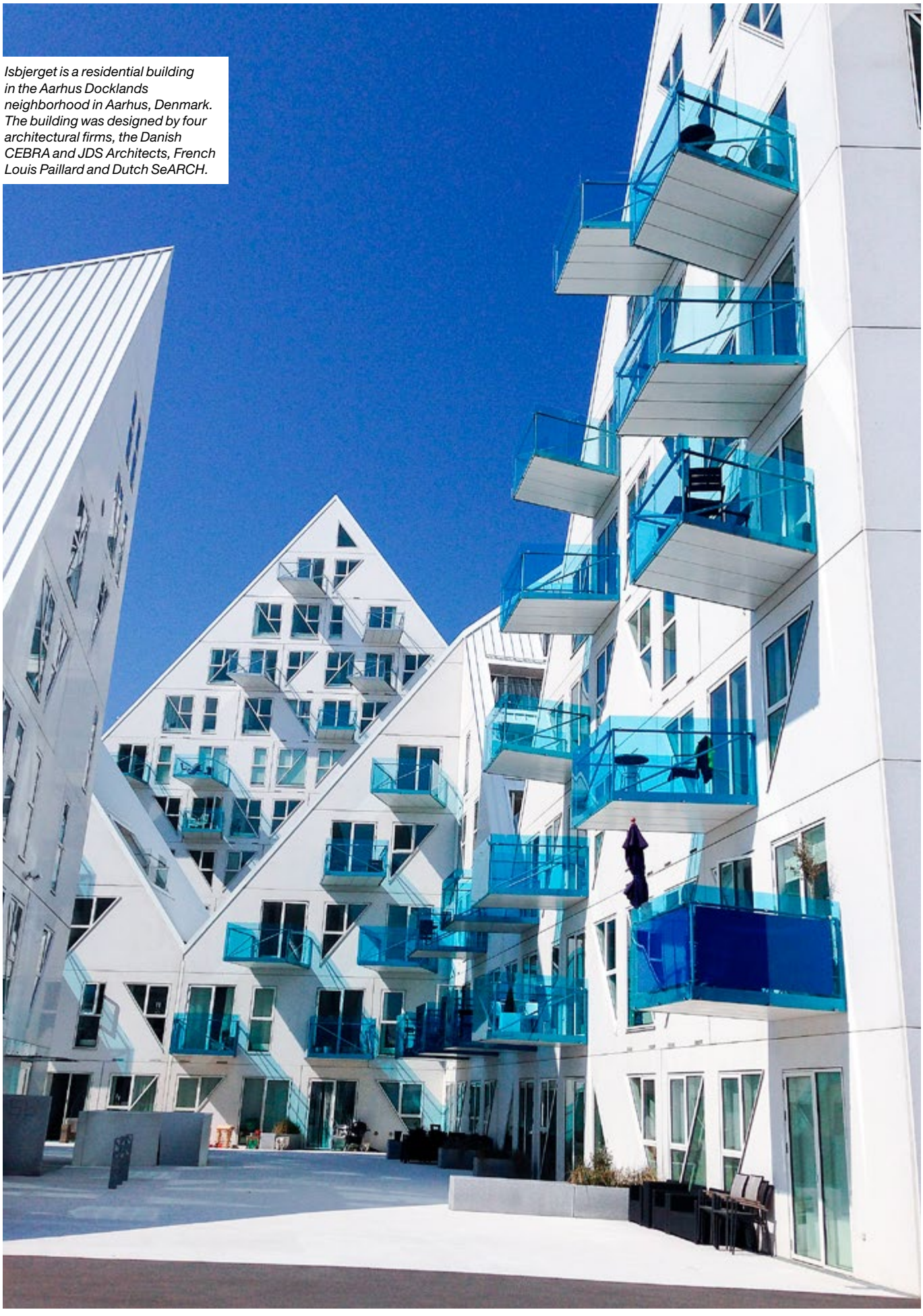
Turning the economic perspective to the Consulting Engineering industry, FRI's latest cyclical survey from October 2018 shows, that 38 percent of the industry expects an increase in their workforce over the next six months, whereas 16 percent expects a decrease. Regarding expected backlog over the next six months, 32 percent of the industry expects an increase, while less than 1 percent expect a decrease in backlog. Overall, the expectations are a bit less optimistic compared to FRI's cyclical surveys for the past two years, as more companies have adjusted their expectations from an increasing backlog and workforce to an expected unchanged situation in six months. But generally, the Danish market for consulting engineering firms are healthy and robust with an expected profit margin of 6.4 percent in 2018.

Revision of the General Conditions for Consulting Services

The General Conditions for Consulting Services has undergone a thorough revision in 2018 and a new set of general conditions called ABR18 will replace the old general conditions agreement (ABR 89) on 1 January 2019. The new general conditions have several consequences for the consulting engineering industry. Most significantly: the position of "the engineer" will change from trusted advisor to "a supplier of services". However, tenders and contracts will be much clearer on what specific services are required, and this increased clarity will be an advantage for all parties involved, including consulting engineering firms.

Declining investments and no plan for infrastructure

In the last few years, there has been decreasing investments in infrastructure, which has increased the pressure on the current infrastructure in Denmark. This in itself is a challenge. But what is more concerning is the lack of a new "national plan for mobility and infrastructure", as the national infrastructure plan "En grøn transportpolitik" (Denmark's green transport policy) from 2009 will be fulfilled by 2020. This visionary plan planned investments of EUR 12 billion (DKK 90 billion) from 2009 to 2020, whereas the Finance Bill for 2018 only allocates EUR 65 million (DKK 420 million) for road investments over the next four years. With no plan in hand, the needed investments in infrastructure will be delayed, which will increase congestion. FRI's hope is that the political parties will agree on a new long-term investment plan for mobility and infrastruc-



Isbjerget is a residential building in the Aarhus Docklands neighborhood in Aarhus, Denmark. The building was designed by four architectural firms, the Danish CEBRA and JDS Architects, French Louis Paillard and Dutch SeARCH.

ture in Denmark following the Parliamentary elections to be held in June 2019 at the latest.

Biggest ongoing projects – Copenhagen light rail and Femern Bælt

Currently two large-scale projects are underway in Denmark: the Copenhagen light rail project and the "Femern bælt" (Fehmarn Belt) connection – an immersed tunnel connecting Denmark to Germany. Regarding the light rail, the first sod was taken in 2018 and the project is expected to be completed in 2025. The light rail extends itself over 28 kilometres and has 29 stations. Regarding "Femern Bælt" the planned starting date for construction is early 2020 and the tunnel is expected to open for traffic in 2028. The immersed tunnel will contain a four-lane motorway, an emergency lane and a double track electrified railroad. The project also requires the surrounding infrastructure to be upgraded in both Denmark and Germany to accommodate increasing traffic due to the fixed link.

Company news Rambøll Denmark keeps growing organically and by acquisitions

With a revenue of EUR 762.5 million in the first half of 2018, Rambøll Denmark has increased its revenue by 4.4 percent compared to 2017. Looking at earnings before taxes (EBIT), Rambøll Denmark didn't perform as well as last year, as profit decreased from EUR 36 million to EUR 24.7 million in the first half of 2018. In February, Rambøll acquired ConStrada AS in Norway with 12 employees and later, MMG Ingenieurgesellschaft für Materialmanagement mbH in Germany. In April, Rambøll acquired DEG Signal Ltd. with 17 employees in UK followed, in early May, by the acquisition of Swedish RSM&CO with 63 employees. Looking at a few of the significant projects in 2018, Rambøll managed to deliver high profile projects such as a pioneering collaboration agreement with Stanford University to develop Danish water technology solutions to California's new groundwater program. In Denmark, Rambøll is designing Denmark's tallest residential building on the harbour front in Aarhus. In India, Rambøll delivers detailed design services and technical support for the construction of India's longest bridge. Lastly, Rambøll provides consultancy services regarding Cyprus' largest power station Vasilikos, which will undergo significant environmental performance improvement and preparatory works for fuel conversion to natural gas, aligned with plans to bring natural gas to Cyprus.

COWI is gaining momentum as revenue and profit increases substantially

In the first half of 2018, the COWI Group increased its revenue to EUR 435 million which is an increase by 8.3 percent compared to 2017. Secondly, COWI managed to increase is earnings before taxes (EBIT) to EUR 20.7 million. This translates to an EBIT profit margin of 4.7 percent, which is a substantial increase from a profit margin of 2.9 percent in 2017. Conclusively in 2018 so far, COWI has increased turnover significantly which in turn leads to expectations of further improvement of profits compared to 2017. With an increasing backlog, COWI is expecting continuous growth for the rest of 2018. Furthermore, COWI is expanding by acquisitions as the organisation has dedicated more than EUR 134 million to acquisitions according to CEO Lars-Peter Søbye. The target of acquisitions is Scandinavia, Great Britain and North America. In April 2018, COWI acquired PB Teknik in Sweden, adding 25 employees to a total number of nearly 1,200 Swedish employees.

And more significantly, on 29th November 2018 COWI announced the acquisition of Arkitema, the largest domestic Danish architectural firm with 550 staff. A selection of the new major 2018-projects for COWI worldwide are the detail design of Mumbai Trans Harbour Link and the detail design of the foundation for a new offshore wind farm in Changua, China. In Denmark, COWI landed the design of the greater Copenhagen light rail and main consultancy of the Baltic gas pipeline running through Zealand.

NIRAS continues its expansion nationally and globally

In the beginning of 2017, NIRAS merged with Alectia, which meant that NIRAS went from 1,400 to 2,100 staff. Throughout the year, NIRAS also acquired five minor companies in Sweden, Norway and the Netherlands adding another 115 employees to the workforce. Due to the merger with Alectia, NIRAS' revenue increased by 44.2 percent in 2017 to EUR 282.2 million. Looking at earnings before taxes, NIRAS ended at EUR 6.7 million which is less than in 2016 and mainly due to extraordinary merger costs. This major merger also affected NIRAS' profit which ended at EUR 2.73 million. In 2018, NIRAS continued its organic growth in addition to the acquisitions of companies that fit NIRAS' culture and strategy. NIRAS is focused on further expanding in Scandinavia. Of larger projects, NIRAS landed the proton center (particle therapy) at Radium Hospital in Olso, the railroad project "Reinsvoll Kryssingsspor" with Bane NOR in Norway and a complete redesign of the socially disadvantaged housing area Vollsmose in Denmark.

Sweco Denmark is off to a great start in 2018

Sweco Denmark increased its EBITA-margin from 7.3 percent in 2017 to 9.4 percent in the first half of 2018. A very notable acquisition by Sweco Denmark was the acquisition of the Danish architecture company "Årstidernes Arkitekter" in the beginning of January 2018. Sweco Denmark added approximately 250 employees to its organisation, going from 1,100 employees to 1,350 in 2018. This also means that the total Sweco Group added more architects to its already substantial portfolio with 1,200 architects employed globally at Sweco Architects. Of larger projects, Sweco Den-

INTERVIEW
IB ENEVOLDSEN
MANAGING DIRECTOR, RAMBOLL DENMARK

"GLOBALISED PROCESSES AND **NEW EXPERTISE ONBOARD**"

The future success of the engineering consultancy industry depends on increased productivity and the ability to co-create, globalise, digitalise and take new expertise on board. Ib Enevoldsen, Managing Director for Ramboll, Denmark's largest consultancy, is optimistic on behalf of the industry.

As the engineering industry becomes more international and consolidated, large consultancies are facing interesting challenges. Globalisation means that consultancies in Denmark are subject to increasing competition from companies and contractors from abroad. In fact, Italian contractors have recently won contracts in Denmark worth over 10 billion DKK and this is a trend that we are seeing across the Nordic region.

One significant challenge we are facing is that of productivity. Reduction of transaction costs and digitalisation in the value creation chain

Ib Enevoldsen, Managing Director, Ramboll Denmark

are keys to success according to Ib Enevoldsen, Ramboll's Managing Director in Denmark.

"Projects are becoming increasingly complex. Because of this, it is a clear advantage for us to employ and integrate a wide range of expertise. Many of our clients demand holistic solutions, and companies that can provide a wide range of professional skills inhouse – from management consultancy to architecture and digital innovation to sustainability knowledge – have a definite advantage," says Ib Enevoldsen.

Design and modelling can in principle be carried out anywhere in the world and this trend will increase further in the years to come. We are fully embracing this trend to succeed, Ib Enevoldsen continues.

Increasing productivity through broader collaboration.

Ib Enevoldsen suggests that engineering consultancies take on the role as co-creators instead of purely being project providers. As co-creators companies need to recruit more employees from backgrounds outside the traditional engineering disciplines – such as stakeholder managers, reality experts and even anthropologists.

Danish consultancies are in a strong position when it comes to working on solutions together with stakeholders, but we need to be aware of the increasing importance of good stakeholder dialogue and ensuring that society is involved in the projects we facilitate.

"This level of client involvement reflects a fundamental shift in the industry - from a more technocratic approach to something more humanistic. The automation of some of our work will allow us to use more time productively with clients and 'co-create' projects."

Ib Enevoldsen is optimistic on the future development of the engineering consultancy industry, even though we need to take more risk.

"I believe that a disruption type change revolution that has had such a profound effect on other industries will not be forthcoming. Clients does with all the wealth we see in the world demand creative solutions in both the shaping process and as a result. A 100% digitalisation of our business will not happen; however we will experience huge changes."

mark is to design waste water solutions in Sri Lanka, which protects coastline and marine life and to design a new school for journalists in greater Copenhagen.

MOE is continuing their growth plan by expanding abroad and by acquisitions

2017 was once again a great year for MOE with EUR 72.5 million in revenue – an 11 percent increase compared to 2016. Due to two acquisitions in 2017, MOE experienced a slight decrease in both earnings before taxes (EUR 4.2 million) and after taxes (EUR 2.35 million) compared to 2016. In 2017, MOE acquired a company that had previously been a partner in the Philippines with more than 100 employees. This was followed by an acquisition of the Danish consulting engineering company "Nielsen & Risager" with 30 employees. Following MOE's growth plan, they also bought a smaller Danish consulting engineering company "Lars Lindgaard" in the beginning of 2018 adding six employees to their workforce. With these acquisitions, MOE has strengthened its position on the Danish and Philippine market. The acquisitions of 2017 and 2018 means that MOE now spans more than 800 employees and still grows organically due to an increasing order book in 2018 in addition to the acquisitions. Of large scale projects, MOE is currently building the Panda house in Copenhagen Zoo and is a part of the greater Copenhagen light rail project.

Orbicon had a challenging 2017 but expects to be back on track in 2018

Looking at the key performance indicators, Orbicon had a challenging 2017. Revenue decreased by 6.8 percent to EUR 65.4 million and, for the first time since 2010, Orbicon experienced a deficit both before and after taxes. The deficit is mainly due to impairments on a couple of challenging projects, a majority of which will be completed in 2018. Taking these projects out of the equation, the expectations for the remaining project portfolio in 2018 looks much brighter. In September 2017, Orbicon hired new CEO Per Christensen followed by a new CFO, technical director and building director who have initiated several business and structural initiatives to improve customer focus, sales and project execution. Orbicon has made no significant acquisitions in 2018 but has strengthened its position in the North Atlantic with subsidiaries in Greenland as well as Iceland.

Atkins Denmark – Now a part of SNC-Lavalin

Atkins Denmark holds 470 employees which represents 3 percent of Atkins

globally and 1 percent of the SNC-Lavalin concern. As Atkins is adjusting to be part of SNC-Lavalin Group, the annually reporting has been adjusted to calendar year, with 2017 being a transitional year containing only 9 months. As of this revenue in Atkins Denmark landed at EUR 40.8 million in 2017, which is a decrease from 50.1 million in the fiscal year 2016/2017. Adjusting for shorter account year in 2017, Atkins Denmark experienced an 8.6 percent growth in revenue. Similar story can be told regarding pro fit, as Atkins Denmark had a profit at EUR 3.4 million in 2016/2017 and EUR 2.3 million in 2017. Looking solely at profit margin, Atkins Denmark gained momentum in 2017 going from 6.7 percent in 2016/2017 to 7.2 percent in 2017, partly by delivering on some of Denmark's most important infrastructural projects. Examples of projects are the Danish pioneer project with driverless busses in cooperation with Movia and Metroselskabet and expansion of the European railroad net Rail Baltica going from Helsinki to Warszawa.

Midtconsult changes name to ÅF Buildings Denmark in attempt to strengthen its position nationally

In 2017, Midtconsult became a part of the Swedish ÅF Group. In the wake of this, Midtconsult changed the company name in 2018 to ÅF buildings Denmark. With this change of name, ÅF Buildings Denmark will interact closer with the Swedish ÅF Group to combine service across different sectors within ÅF. ÅF Buildings Denmark employs around 600 people in 2018. With the ambition of becoming one of the three biggest consultants in Denmark within the building sector, ÅF Buildings hired new CEO Martin Venning Kjær in September 2018. In early 2018, ÅF Group also acquired Gottlieb Paludan Architects in Denmark, which added 90 employees to the total number of 600 employees.

EKJ continues to grow at slightly slower pace

EKJ continued growing in 2017 as turnover hit EUR 27 million, which is a minor increase compared to 2016. The result before taxes (EBIT) ended at EUR 1.83 million which is less than in 2016, but with a profit margin at 5.5 percent after taxes, EKJ made a solid foundation for further growth in 2018. Of large projects, EKJ has won the Danish Storstrøms bridge, a university hospital in the suburbs of Copenhagen, and Hamborg square in Copenhagen. Furthermore, as of 1 November 2017, EKJ acquired the offices of Balslev Consulting Engineers to strengthen its presence in West Denmark.

Norconsult expands as Norconsult Denmark takes over KAII

In September 2018, Norconsult Denmark acquired the Danish company KAII and thereby expanded its number of employees in Denmark from 150 to approximately 200. Norconsult Denmark is still growing organically, in addition to the acquisitions, due to an increasing order book in 2018. In the first half of 2018, Norconsult Denmark managed to increase both revenue and profit compared to 2017 and expects to increase both in size and in areas of business.

Henrik Garver, FRI

Jan Ove Hansen, FRI

About FRI

The Danish Association of Consulting Engineers (FRI), founded in 1904, is a trade association for Danish consultancy firms providing independent consultancy services on market terms. FRI is a part of the Confederation of Danish Industry (DI).

Approximately 300 firms are members of FRI and, in total, they employ close to 28,000 staff in Denmark and abroad. The association is the only trade association for independent technical consultants in Denmark.

The objective of FRI is to support its member firms by contributing to improving their business conditions, strengthening the industry's framework conditions, profiling the industry and increasing its recognition on national and international levels.

FRI is an association for firms. It focuses on business matters and has established good liaisons with authorities and other partners. The association attempts, as far as possible, to gain influence on the drafting of framework conditions and legislation affecting market conditions in the industry.

Internationally, the association is a member of FIDIC, and in Europe, it is a member of EFCA.

Henrik Garver, CEO, FRI (Danish Association of Consulting Engineers)

Jan Ove Hansen, Market analyst FRI

Address: Vesterbrogade 1E, 3rd floor
P.O. Box 367
DK-1504 Copenhagen V
Tel.: +45 35 25 37 37
Fax: +45 35 25 37 38
E-mail: fri@frinet.dk
www.frinet.dk

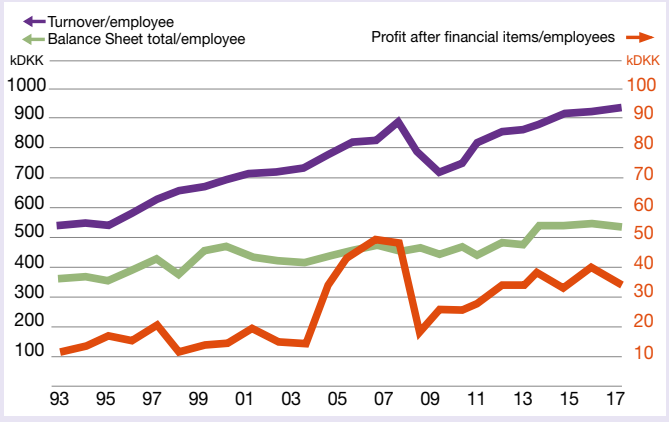
THE TOP 100 DANISH CONSULTING ENGINEERING AND ARCHITECTURAL GROUPS

	2018	2017	Group	Service	Annual report	Turn-over MDKK	(previous year)	Average number of employees	Tot. Balance sheet MDKK	CEO/Managing director
FRI	1	1	Ramboll Group	MD	17	10795.3	10607.7	12590	6412.6	Jens-Peter Saul, group CEO Ib Enevoldsen, CEO Denmark
FRI	2	2	COWI (acquired Arkitema, Nov-18)	MD	17	6568.4	5939.0	7104	3650.0	Lars-Peter Søbye
FRI	3	3	NIRAS Group	MD	17	2174.5	2078.0	2206	1258.0	Carsten Toft Boesen
FRI	4	4	Sweco Denmark *	MD	17	1382.3	1096.0	1231	670.0	Dariush Rezai
FRI	5	6	MOE A/S	MD	17	587.2	531.4	693	326.4	Christian Listov-Saabye
FRI	6	7	Orbicon A/S	MD	17	490.7	522.3	592	204.2	Per Christensen
FRI	7	5	Atkins Denmark (SNC-Lavalin Group)	MD	17	465.2	579.4	621	222.5	Eva Charlotte Rindom
FRI	8	12	ÅF Denmark (incl Midtconsult) *	PM	17	434.8	280.0	513	197.9	Martin Kjær
	9	10	Dansk Ingeniørservice A/S *	I	17/18	392.0	324.4	270	116.2	Michael Gadeberg
	10	9	Eltronic A/S	I	17	369.4	325.1	247	142.0	Lars Jensen
	11	13	BIG / Bjarke Ingels Group *	A	17	332.5	250.0	216	269.5	Sheela Maini Søgaard
	12	11	Arkitektfirmaet C.F. Møller	A	17	304.1	314.7	286	190.8	Klaus Toustrup
	13	14	Henning Larsen Architects	A	17/18	279.4	268.5	288	239.1	Mette Kynne Frandsen
	14	16	Graintec	I	17	231.5	205.8	53	113.6	Michael Mortensen
	15	17	Geo	I	17	228.8	204.1	199	205.3	Kim Silleman
	16	15	ISC Rådgivende Ingeniører A/S	MD	17	218.0	219.0	234	199.2	Kjeld Thomsen
FRI	17	18	EKJ Rådgivende Ingeniorer A/S	MD	17	194.7	197.9	227	170.3	Jørgen Nielsen
	18	28	Dansk Miljørådgivning A/S (DMR) *	Env	16/17	164.0	98.6	100	46.8	Claus Jørgen Larsen, Mikael Ejner Nielsen
FRI	19	21	OBH-Gruppen A/S	MD	17	161.7	141.8	153	78.5	Carsten Gregersen
FRI	20	29	NTU International A/S	CE,PM	17/18	149.0	95.7	61	121.0	Lars Bentzen
FRI	21	35	AlfaNordic ApS *	MD	17	141.8	80.7	64	24.1	Thomas Meldgaard Petersen
	22	19	Schmidt Hammer Lassen Architects K/S *	A	17	138.5	144.3	120	74.0	Bente Damgaard
	23	22	Kuben Management A/S	PM	17	138.1	130.5	129	80.0	Ulf Christensen
FRI	24	24	Søren Jensen A/S Rådgivende Ingeniører	MD	16/17	134.2	120.5	157	77.5	Frank Jensen
	25	34	3XN A/S	A	17/18	129.9	81.2	85	65.3	Jeanette Hansen
	26	26	Lundgaard & Tranberg Arkitekter A/S *	A	16/17	126.0	108.2	63	92.0	Peter Thorsen
FRI	27	39	Norconsult Danmark A/S	MD	17	105.3	73.6	103	89.9	Thomas Bolding Rasmussen
FRI	28	31	Oluf Jørgensen Gruppen	MD	17	103.5	87.4	122	58.6	Brian Thyregård Andreasen
	29	38	Process Engineering A/S	Enr,I	16/17	103.5	74.0	75	30.7	Poul B. Jakobsen
	30	30	Vilhelm Lauritzen AS	A	17	98.2	90.7	109	97.9	Gyrithe Saltorp
	31	27	CUBO Arkitekter A/S *	A	17/18	94.1	106.8	64	31.8	Peter Dalsgaard
	32	62	Tegnestuen Vandkunsten ApS *	A	17	92.4	46.1	72	34.3	Flemming Ibsen
FRI	33	32	Cunningham Lindsey	PM	17	88.9	84.3	81	51.7	Christian Leif Hansen
	34	25	PLH Arkitekter AS	A	17	88.8	110.2	81	35.9	Søren Mølbak, Svenn Gunborg Olsen
	35	36	Erik Arkitekter (fd KPF Arkitekter)	A	17	86.7	87.7	99	62.0	Sine Juul Praastrup
FRI	36	49	AI-Gruppen A/S	MD	17	84.0	59.9	75	53.5	Jan Bruus Sørensen
FRI	37	33	Balslev Rådgivende Ingeniører A/S	MD	16/17	83.0	83.8	109		Henrik Rosenberg
FRI	38	37	Wissenberg A/S	MD	17	81.8	74.8	85	43.5	Lars Bendix Christensen
FRI	39	40	Ingeniør'ne A/S	MD	17	81.7	72.0	90	62.1	John Andresen
	40	41	COBE ApS *	A	16	75.0	66.4	86	27.0	Nina Mathiesen
FRI	41	61	Dines Jørgensen & Co A/S *	MD	17/18	72.0	47.0	58	26.7	Ole Rasmussen
	42	45	Mangor & Nagel A/S	A	17	68.9	63.3	87	33.6	Bente P. Andersen, Jakob B.Andersen, Torben Nagel
	43	57	Christensen & Co. Arkitekter A/S *	A	17/18	68.0	49.4	42	23.9	Vibeke Lydolph Lindblad, Michael Christensen
	44	51	Friis & Moltke A/S *	A	17	64.5	57.6	52	30.5	Palle Hurwitz, Jens Ole Bahr
FRI	45	92	OSK -Ship Tech A/S	CE, I, PM	17/18	63.1	29.6	38	20.9	Jacob H. Thygesen
	46	43	Kullegaard Arkitekter A/S	A	16/17	62.4	64.5	62	25.0	Thomas Kullegaard
	47	46	White Arkitekter A/S *	A	16	62.0	64.7	50	34.0	Frans Andersen
	48	67	Danielsen Architecture A/S *	A	17/18	62.0	43.7	32	18.2	Kasper Danielsen
FRI	49	55	Dominia A/S. Rådgivende Ingeniører	MD	17	61.4	53.5	58	20.7	Kjeld Christiansen
	50	106	Dorte Mandrup Arkitekter A/S	A	17/18	60.2	33.5	68	10.7	Frants Frank Nielsen
	51	42	K2 Management A/S *	PM	16/17	60.0	64.8	49	37.7	Lars Koue Hammershøj
	52	66	KANT Arkitekter A/S	A	17	60.0	43.9	60	37.8	Morten Stahlschmidt
	53	52	JJW Arkitekter A/S	A	17	59.7	56.8	77	29.0	Nina Kovsted
	54	47	Rubow Arkitekter A/S	A	17	58.1	60.9	62	28.5	Lars Bo Lindblad
	55	50	Ingeniørfirmaet Viggo Madsen A/S *	CE	17	57.7	59.0	41	31.1	Kim Clausen
	56	58	Rørbæk og Møller Arkitekter ApS	A	17/18	57.3	48.1	47	43.5	Nicolai Lund Overgaard
FRI	57	53	DGE Miljø- og Ingeniørfirma A/S	Env	17	55.9	55.4	71	19.3	Poul Erik Jensen
	58	44	H+Arkitekter (Hou & Partnere)	A	17	55.7	63.8	40	33.2	Rasmus Lund Klausen
	59	69	AN Group A/S *	I	17	55.6	43.3	30	15.6	Ole Okkels
	60	73	Creo Arkitekter A/S *	A	17	55.4	40.9	49	34.1	Henning Gammelgaard Andersen
FRI	61	105	Lyngkilde A/S Rådgivende Ingeniørfirma A/S	MD	17/18	55.0	26.6	39	22.0	Claus H. Larsen
	62	56	Viegand & Maagøe Aps *	I, Env	17	53.9	50.7	36	24.1	Søren Eriksen
FRI	63	99	Spangenberg & Madsen Rådgivende Ingeniørfirma A/S	MD	17	53.2	28.5	44	14.0	Michael Rasmussen
	64	72	Aart A/S	A	16/17	52.6	41.7	53	49.2	Torben Skovbjerg Larsen
	65	78	KHR Arkitekter AS	A	17	52.5	38.4	61	40.2	Lars Erik Kragh

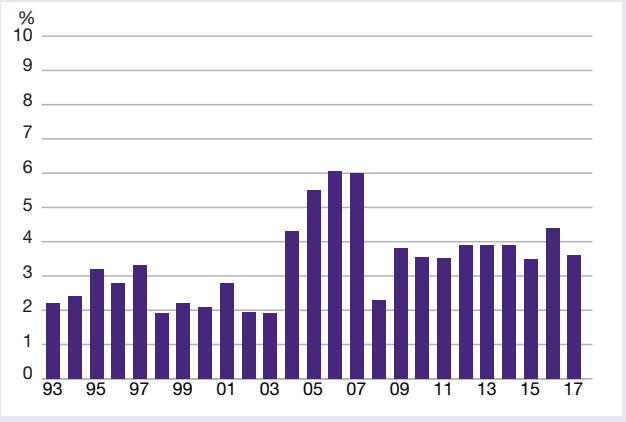
FRI = Member of FRI, the Danish Association of Consulting Engineers,
(*) = lack of conforming figure/proforma/assumed, – = missing figure PM = Project Management, A = Architecture, CE = Civil/Structural Engineering, Env = Environment, Enr = Energy, E = Electrical,M = Mechanical/HEVAC, I = Industrial, MD = Multi Disciplinary

	2018	2017	Group	Service	Annual report	Turn-over MDKK	(previous year)	Average number of employees	Tot. Balance sheet MDKK	CEO/Managing director
	66	70	Holscher Nordberg Architects A/S *	A	17	51.6	42.9	42	17.9	Mikkel Wiell Nordberg
	67	71	Arkitektfirmaet Kjaer & Richter A/S *	A	17/18	51.5	42.0	41	24.1	Ole Madsen
	68	64	Schønherr A/S *	A	17	51.3	45.1	50	15.8	Nina Jensen, Rikke Juul Gram
	69	90	RAVN Arkitektur A/S *	A	16/17	51.0	30.8	33	12.9	Søren Sehested Ravn
	70	60	Peter Jahn & Partnere A/S *	CE, A	17/18	50.8	47.5	32	14.0	Jacob Lemche
	71	77	Eseebase A/S *	A	17/18	50.5	38.5	34	37.8	Per Østerby Klitte
	72	85	SLA Arkitekter A/S	A	17	49.8	40.7	98	15.2	Mette Skjold
FRI	73	112	Strunge Jensen A/S *	MD	17/18	49.8	24.9	32	10.9	Jesper Strunge Jensen
	74	91	ZESO Architects ApS *	A	16/17	48.4	30.0	45	17.0	Torben Juul Andersen & Claus Høeg Olsen
	75	65	RUM A/S *	A	17/18	47.1	44.7	38	21.7	Marianne Kjerkegaard Kristensen
	76	95	Signal Arkitekter ApS *	A	17	45.7	28.8	24	11.2	Birgitte Andersen
FRI	77	74	INUPLAN A/S *	MD	17	44.0	40.1	31	16.5	Kristian Lennert
	78	79	LIC Engineering A/S	CE, Enr, M	17	42.7	37.6	39	15.9	Niels-Erik Ottesen Hansen
FRI	79	81	Brix & Kamp A/S	MD	17	42.3	36.4	46	33.2	Søren Jepsen
FRI	80	59	Hundsbaek & Henriksen A/S	MD	16/17	41.8	48.0	55	23.0	Niels Lerbech Sørensen
	81	75	Knud E. Hansen A/S Naval Architects *	I	17	41.6	40.0	54	20.9	Finn Wollesen Petersen
	82	96	Ingeniørgruppen Varde	MD	17	41.1	28.7	27	14.4	Henning Andersen
	83	104	C & W Arkitekter A/S *	A	17/18	40.1	27.0	27	20.0	Christian Samir Alstrup Thuesen
FRI	84	122	LB-Consult A/S *	MD	17	40.0	21.4	29	9.0	Lars Bager
	85	68	Emcon A/S	PM,CE	17	39.7	43.5	27	14.9	Jeppe Blak-Lunddahl
	86	86	Designgroup Architects A/S *	A	17	38.9	33.6	23	7.5	Christian Giese
FRI	87	118	Tyréns A/S	MD	17	38.8	21.9	53		Jan Holsøe
	88	83	Gehl Architects ApS *	A	16/17	38.6	36.2	29	17.5	Helle Lis Søholt, Henriette Vamberg Rasmussen
	89	109	AK 83 Arkitektkontoret A/S *	A	17/18	37.8	25.6	18	15.7	Lars Levin Madsen
	90	110	Nøhr & Sigsgaard Arkitekter a/s *	A	16/17	37.4	25.4	19	25.1	Lars Anker Clausen
	91	48	Cebra Arkitekter A/S *	A	17	37.0	60.2	32	24.0	Kolja Jannik Nielsen
FRI	92	63	Gaihede A/S	MD	17	35.6	46.0	41	11.1	Jacob Ulrik Sachse
	93	103	GPP Arkitekter *	A	17	34.7	27.4	29	22.0	Søren Madsen
	94	108	TNT Arkitekter A/S *	A	17	34.7	25.6	29	12.3	Martin Beck Thiel
FRI	95	145	Holmsgaard a/s Rådgivende Ingeniører *	MD	17	34.7	15.7	24	13.8	Henrik Holmsgaard Larsen
	96	84	Dissing+Weitling Architecture A/S *	A	17	34.1	36.0	38	24.0	Steen Savery Trojaborg
	97	120	DOMUS arkitekter A/S *	A, PM	17	33.5	21.7	22	12.1	Henrik Hansted Jensen
FRI	98	88	Grue & Hornstrup Rådgivende Ingeniører A/S *	CE, E	16/17	33.5	32.9	21	18.0	Lars Grue
FRI	99	89	Viborg Ingeniørerne A/S	MD	17	32.8	31.4	37	23.7	Karsten Lindberg
FRI	100	97	D.A.I. Gruppen A/S	MD	17	32.8	28.6	36	22.2	Kim Heshe

The top 30 Danish groups



Profit margins



Generally speaking, it is risky business making direct comparisons between key business ratios for the largest firms and corresponding figures for the medium and small-sized firms. In the case of the latter firms, the extensive efforts of the often many partners has a relatively significant impact on the companies' turnover and profit level per employee.

For firms 31-100 in the above list, turnover in 2017 increased by 1% to approximately DKK 3,799 million (DKK 3,407 million in 2016). The number of employees fell by 1.5% to 3,407 (3,456). The turnover per employee consequently grew to DKK 1,116,000 (DKK 986,000). The profit before tax increased to DKK 67,000 per employee (DKK 65,000). Calculated in terms of profit margin, this gives 6.0% (6.7%). The average balance per employee was approximately DKK 531,000 (DKK 498,000).

Key business ratios 30 largest groups	2017	(previous year)
Turnover per employee	DKK 939k	DKK 913k
Profit after financial items per employee	DKK 34k	DKK 40k
Balance sheet total per employee	DKK 537k	DKK 544k

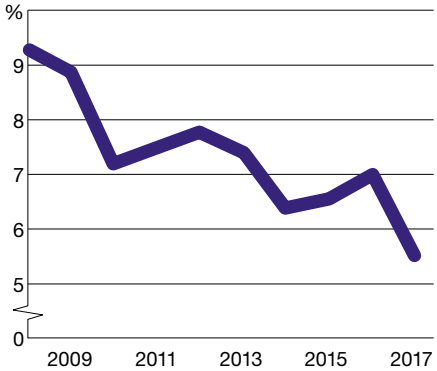
The turnover for the 30 largest groups increased by 6% to approximately DKK 27,143 million (DKK 25,619 million in 2016). The average number of employees grew by 3% to 28,911 (28,055). The turnover per employee was 939,000 DKK (913,000 DKK). The profit before tax fell to DKK 34,000 per employee (DKK 40,000 the previous year). The profit margin for the 30 largest groups in 2017 fell to 3.6% (4.4% in 2016). The average balance per employee was approximately DKK 537,000 (DKK 544,000).

ECONOMIC GROWTH IN NORWAY AND RISING INTEREST RATES – **WILL THE GROWTH CONTINUE?**

The Norwegian economy and corresponding willingness to invest has been increasing during the latter half of 2017 and throughout 2018. Norway, as a supplier of energy and raw materials, has experienced rising prices and good exports. Along with a significant stimulation of the economy through the use of public and state funds, the market for consultant engineers has been good. Significant funds have been invested in public construction projects and in new infrastructure. Moreover, funds have been allocated in order to catch up on the considerable maintenance backlog for older infrastructure and public buildings. This has been favourable to the industry and has led to a growth in turnover of 17 % in the last three years.

The Norwegian economy is in line with other economies in a booming business cycle. The prognoses for growth in the mainland economy are calculated at a BNP growth of 2.3% in 2019. The prices of oil and gas are now on the way up. This has contributed to a stabilisation of investments in oil and gas activities. Moderate wage settlements combined with weaker exchange rates for the Norwegian krone contribute to improving conditions for other export businesses and competitive sectors. With an anticipated inflation rate of 2.5% in 2018 and 1.5% in 2019, falling levels of unemployment (3.7%) and an increase in BNP growth (2.3%), the Norwegian economy is healthy. This indicates a good level of activity in the Norwegian economy and for Norwegian consulting engineers in 2019 and we also anticipate good activity in 2020 and 2021.

Developments in pre-tax profits for the industry in 2008–2017



EBT-margin

Norway, that has major, fluctuating and transient incomes from natural resources, established an oil fund in 1990. The oil fund (The Government Pension Fund) was established in order to combat an excessively high cost level and to stabilise domestic consumption. The market value of this fund in 2018 is anticipated to be in the region of BNOK 8500. This means that Norway is still a wealthy country with major opportunities. The state can therefore use the dividends from this fund to stimulate the economy and to maintain levels of employment. In 2019, it is expected that this stimulus will amount to BNOK 231. This will also mean that major investments will be made in sectors such as infrastructure (in particular roads and railways) energy and the environmental and public sectors at state and regional levels. Moreover, huge sums are being invested in health, schools and cultural buildings and a good level of investment is being maintained in the municipal sector. As a whole, this will mean a good market for planning and for our industry.

The consultancy industry in Norway – strong concentration, increased international competition and a need for improved earnings

The consulting industry in Norway has become more and more international, both in terms of ownership and competition in the Norwegian market. In 2018, approximately 38% of employees in RIF – Association of Consulting Engineers are wholly or partly owned by international consultancy groups. If we include international groups working in Norway that are not associated with RIF, this figure is even higher.

Activity in the market is characterised by the fact that the 6–7 largest companies have approx. 75% of the market – i.e. a significant market concentration. This has not led to weakened competition and the companies have experienced a relative downturn in turnover and profit per employee from 2014 to 2017. In 2017, pre-tax profits were on average approximately 5.5%.

The market – good activity in the development of infrastructure and energy market: market is stable and good

The building and construction industry, viewed as a whole, has been experiencing continual growth from 2011. As of November 2018, the industry is anticipating stable, good activity in 2018 and 2019. Employment in the industry is expected to increase in 2018 and 2019.

Production in the building and construction market, apart from oil and gas, has increased by 28% in the period 2010–2018. In the same period the number of employees in the building and construction sector has increased by 50 000, to 235 000. For 2019 until 2020, production is expected to increase by an extra 4% per year.

The market for consultant engineers is growing and investments are expected to increase by 4% per year for 2019 and 2020. The construction market is expected to increase by 1% in 2019 and 2% in 2020. In

INTERVIEW
ØYVIND MORK
CEO ASPLAN VIAK AS

"BUSINESS MODELS HAVE CHANGED . . . WORK IS BECOMING MORE AND MORE SEAMLESS IN THE VALUE CHAIN."

The consulting engineering/architectural market is becoming increasingly consolidated and globalized. Larger companies grow bigger offering more services (competences) on more locations. Consulting engineers are integrating architects. Industrial engineers and consulting engineers are merging. The alternative seems to be remaining small and niched. Do you agree with this description?

The RIF industry in Norway has undergone a significant consolidation process during the last 10-15 years. The major interdisciplinary companies now represent approx. 70% of the market and this development is likely to continue. The tendency that major engineering companies also establish architecture has become particularly more prevalent in recent years.

What is the advantage of integrating more competences within the same organization?

Øyvind Mork, CEO Asplan Viak AS

The benefit of collecting all interdisciplinary competence within an organisation is that it is then possible able to achieve a closer and more interactive work process. Specialist in each individual profession no longer sit individually and then coordinate once a week. Today, work is done steadily more in a model where it is possible to see developments in other professional disciplines, at the very moment they are carried out. This leads to a completely different tempo and additional opportunities to test out alternative solutions. In addition, it makes the work more interesting as there is a greater opportunity to learn from other professional expertise.

How has an increasingly international market place changed the industry or company?

Internationalisation has in fact changed the industry less than many had initially believed. I believe that this is due to the fact that Norway is far ahead in the development of digital solutions. Digitalisation brings efficiency benefits that partially offset the difference in costs in various countries and world regions. However, we have to consider that the RIF industry, as with all other industries, will become an international arena to a far greater degree in the coming years.

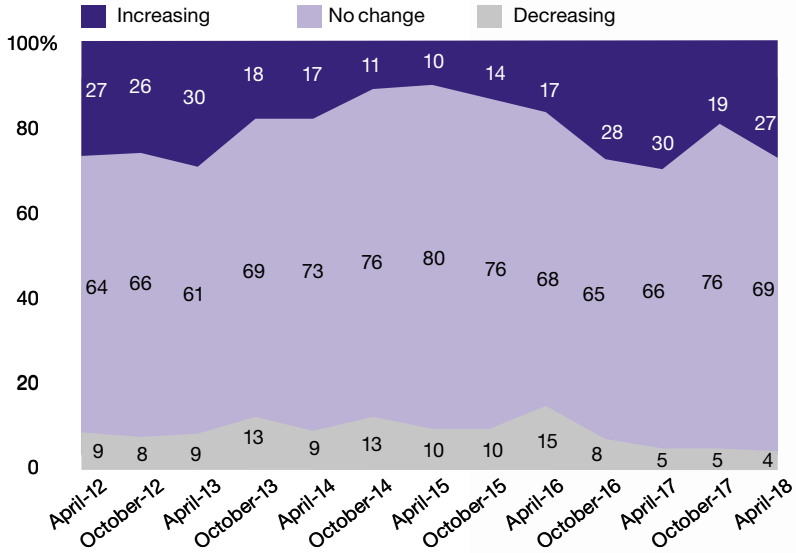
How have business models changed in the last 10 years? (Do you agree they have changed?)

Business models have changed, primarily in that work is becoming more and more seamless in the value chain. This means that project owners, planners, project engineers, contractors, suppliers and operating organisations have a need for closer cooperation.

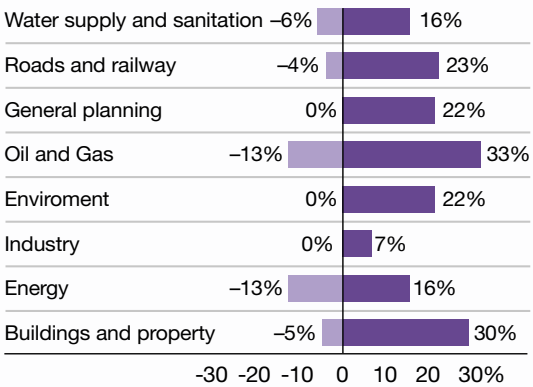
What are the main challenges for your company today?

The biggest challenge for Asplan Viak is to continually attract the best brains. Our industry sells knowledge and companies with the most able employees usually win bidding competitions. In order to attract the best, we have to build up a good culture in which employees develop and thrive. We must ensure that we participate in the most interesting projects - and we must of course be able to offer competitive terms and conditions. In addition, it is nice to find that young people in particular place major emphasis on values and the company is engaged in the environment and sustainability.

Expected order stock in 3 months 2012–2018



Expected change in order stock in 3 months per market segment



Development in companies' order reserves during the last six months distributed between business areas. The blue column indicates the share that has performed "better than forecast" while the grey column indicates the share that has performed "lower than forecast".

> "THE MARKET FOR CONSULTANT ENGINEERS IS GROWING AND INVESTMENTS ARE EXPECTED TO INCREASE BY 4 % PER YEAR FOR 2019 AND 2020."

Ulsholtveien 31 sits on a ridge at Furuset, with views toward Groruddalen and Lillomarka behind the new buildings. Architect: Haugen/ Zohar Arkitekter AS.

the construction market (infrastructure), we anticipate an increase in activity in 2019 and 2020 of 13% and 10% respectively.

The number of employees in RIF companies, as of 2018 is approximately 12 000. This is an increase of 55% from 2010 to 2018. Companies are expecting continued growth in 2019 and expect to increase staffing by a further 4 % in 2019.

Consulting engineers – anticipated developments in 2019 and 2020

Consulting engineers in Norway work to a major degree on planning and engineering in relation to the building and construction market. Market developments for consulting engineers are largely driven by major construction and refurbishment of infrastructure in Norway. This now the largest driver for continued growth. In addition, there has been a high level of activity within construction, driven in particular by public building projects in connection with construction of academic institutions, health and care institutions and cultural buildings. We anticipate a good and growing market in 2019 and 2020.

RIF companies' expectations regarding changes in order reserves as of the summer of 2018 show the same trend. The order reserve has improved since the autumn of 2017.

Consulting engineers – challenges

Despite a good and expanding market from 2010–2018, earnings in companies have fallen in the same period, and in 2017 the industry achieved an average pre-tax profit of approx. 5.5%. In a historical perspective, this is one of the poorest results that the industry has achieved.

Strong growth in the industry, combined with increased risk and level of conflict in the building and construction industry in general are largely the reasons for this development. Contract strategies of the major developers in the building market – particularly the construction market – are increasingly based on turnkey contracts. The major turnkey contractors have taken on greater and greater risk that they then try to pass on to consultants. Particularly on larger infrastructure projects, this has led to insufficient profitability for the industry.

Other reasons for low profitability are high transaction costs and public authority clients' focus on hours and hourly rates – and not on value. This has now resulted in RIF promoting the Best Value method, which is now beginning to spread via a number of pilot projects. Nye Veier and several municipalities have tested out the model with extremely good results. The most recent best value contract from Nye Veier is for the E6 Kvithammar–Åsni Trøndelag, for BNOK 5.3. Like others, they have had documented and experienced that by focusing on contractors' and consultants' com-

PER KRISTIAN JACOBSEN, Managing Director, Norconsult:

"Norconsult is presently experiencing a strong market with a high level of activity within most market areas. We have quite a number of major, interesting ongoing and impending projects, such as the new E39 Kristiansand West–Mandal East, new Bodø airport, fjord crossing E39 Bjørnafjorden, town development and project planning in Bispevika in Oslo and New Hammerfest Hospital. Norconsult has won several major contracts in recent years, both alone and together with strong cooperating partners. We also consider the coming year to be favourable in terms of the market and opportunities."

CHRISTIAN NØRGAARD Madsen, Group Chief Executive, Multiconsult:

"The market for Multiconsult Group's services within consultancy and architecture is improving within all our business areas in Scandinavia. Good macro conditions and rising oil prices have contributed to greater optimism and willingness to invest in the Norwegian market, whilst investments within transport and communications have increased to a good level. The challenges lie in finding how we can increase profitability on projects with high volumes and prioritise profitable projects within a large number of projects."

bined competence and value creation, this has led to more value for the client and user, in addition to fewer conflicts.

Some exciting projects

RAIL AND ROAD. The largest new individual project in the coming years within transport and communications is a new railway line in Østfold, to be followed by Vestfold. BNOK 55 will be invested, with an anticipated start-up for planning and construction in 2020. Other projects are Sandbukta – Moss, with start-up planned in 2019, with a framework of approx. BNOK 7.2, Eidsvoll-Hamar BNOK 8.0 and Drammen-Kobbervikdalen BNOK 6.7. A corresponding rail project is planned between Sandvika and Hønefoss – (Ringerike Line), where a new railway and parallel motorway is to be built. The project is estimated to cost BNOK 27. This is presently in the planning phase.

In addition to this, there are ongoing investments in tramways and rail to improve punctuality and increase capacity in order to serve a growing population in and around the larger towns and cities. Fornebu line in Oslo with a cost framework of BNOK 13.8 are examples of larger projects presently at the planning stage. Start-up for the project is in 2020.

A number of major motorway projects are also in the planning and construction stage, with focus on major road, bridge and tunnel projects designed to link regions and reduce threats posed by avalanches and land/rockslides. Examples of larger projects that are presently in the planning phase, where construction works are expected to begin in 2019 are several stretches of the European highways E6 and E18 where investment totals approx. BNOK 60. The largest projects are E39 Molde-Vestnes BNOK 11.6, E39 Rogfast BNOK 10.5, E6 Ulsberg-Melhus BNOK 10.2, Rv 555 Sotrasambandet BNOK 8.4, and E6 Moelv-Øyer BNOK 8.0.

WATER AND ENERGY. The need to develop trade and industry, increased energy prices and the demand for renewable energy has resulted in the planning and implementation of several exciting projects. Investments are being made in new hydroelectric plants, older generating plants are being refurbished and new small-scale generation plants are being constructed in order to increase the capacity for renewable energy. In 2019 and 2020, approx. BNOK 13 per year in new wind, gas power stations and hydroelectric systems along with power lines and cables. Grid capacity for the transport and export of energy is being increased and almost BNOK 160 is being invested over a 15-year period in order to secure safer and higher capacity power distribution in Norway and to Europe.

CULTURAL BUILDINGS. The new National Museum, the new Munch Museum and a new main library in Oslo are under construction. In addition, several large state, county and municipal cultural centres are being planned and constructed throughout the country.

NEW GOVERNMENT BUILDINGS. After the terrorist attack on the government and ministerial buildings, a major, comprehensive planning process has been started to construct completely new government buildings in Oslo. This is calculated to cost over BNOK 10 and planning has started in 2018.

INTERNATIONAL PROJECTS. Almost 40% of employees in Norway work for companies that are owned by foreign consultancy groups, primarily serving the Norwegian market.

An attractive domestic market, with lower ethical and commercial risks along with a high cost level for consulting engineers from Norway has resulted in that Norwegian consulting engineering companies have been less active in international enterprises. The export stake, which represents approx. 5% of turnover, is stable.

OPTIMISM AND GROWTH IN NORWAY

– We had thought the growth in Norway would level off, but the graphs are still pointing upwards, says Egil Skavang, CEO of the Association of Consulting Architects in Norway. The final figures are not ready yet, but everything indicates the turnover growth continued through 2017 as well.

– "Concerns that the Norwegian banks would increase their interest rates has resulted in a decline in the housing construction rates, leading to a somewhat weaker growth in the housing market for architects in 2017. Municipal planning work, on the other hand, is showing promising growth, and we also see that the number of people buying a second house is increasing once more – especially in Oslo, where there is a significant rental market. Public buildings account for a large proportion of the growth in Norway, where amongst other things several hospitals and university buildings are being constructed. While there has been a decline in the housing development market for architects, the number of construction projects for public buildings has increased. The transportation sector is also experiencing significant growth; however, these projects usually fall to entrepreneurs and advisers rather than architects", says Skavang

Several prestigious projects are underway

The restoration of the government quarter of Regjeringskvartalet in the wake of the terror attack on 22 July, 2011 is one of the largest construction projects in Norwegian history. The competitive tender was won by Team Urbis, headed by Nordic – Office of Architecture and including Rambøll, SLA, Bjørbeck & Lindheim, Asplan Viak, Haptic

About RIF

RIF is the industry organization for approved consulting companies in Norway. RIF companies encompass both consulting engineers and other professions and the activities of members are largely associated with the building and construction market. In 2018, RIF has 160 member companies, with approximately 12,000 employees and represents approximately 70% of the independent consulting engineer industry in Norway.

RIF is the member companies' tool for creating the best possible commercial terms by working for improved framework conditions: Politically, financially and in relation to assignment providers.

RIF prioritises the follow-up of framework terms and conditions for member companies. There has been special focus on regulation changes, predictable financing, appropriations, National Transport Plan, standardisation processes including the use of standard contracts, procurement of engineering and consultancy services, execution models and implementation of public procurement.

Companies in the building and construction industry in Norway employ considerable resources in drafting baseline industry contracts managed by Standard Norge. Project owners, contractors, consultants and others participate in this work. It is part of the established arrangement that contracts being drawn up shall be used in their current form. However, RIF regularly experiences that many project clients - particularly among the more than 400 municipalities - do not use industry contracts or apply significant deviations from these. RIF therefore follows up all deviations it becomes aware of, via enquiries to these project clients. The large majority of project clients amend these deviations after RIF has contacted them.

RIF has the aim of being a contributor to policy formulation and knowledge source in the public discourse. RIF therefore uses the media to draw attention to and to raise the industry's profile as a central contributor to policy formulation for future-oriented and cost-effective solutions. The political influence takes a starting point in the proposals in the RIF report «State of the Nation» that shows a need for renewal and maintenance in public building and infrastructure. In addition, certain objectives have been set associated with important social drivers such as climate challenges, sustainability and digitalisation. In addition, increased visibility is used to increase knowledge in society concerning the role of members, competence and value creation, particularly within sustainable and robust climate-related solutions, fully digital projects and lifecycle costs.

RIF also highlights members' competence by, among other things, giving awards. The level of RIF's "Young Consultant of the Year" candidates and winners has been so high in recent years that they have also been given either honourable mentions or won the European Federation of Consulting Engineers Associations (EFCA)'s YP award.

RIF is a member of EFCA and FIDIC.

Liv Kari Hansteen, RIF

Clas Svanteson, RIF

Liv Kari Hansteen, Managing Director, RIF
Clas Svanteson, Manager RIF insurance services

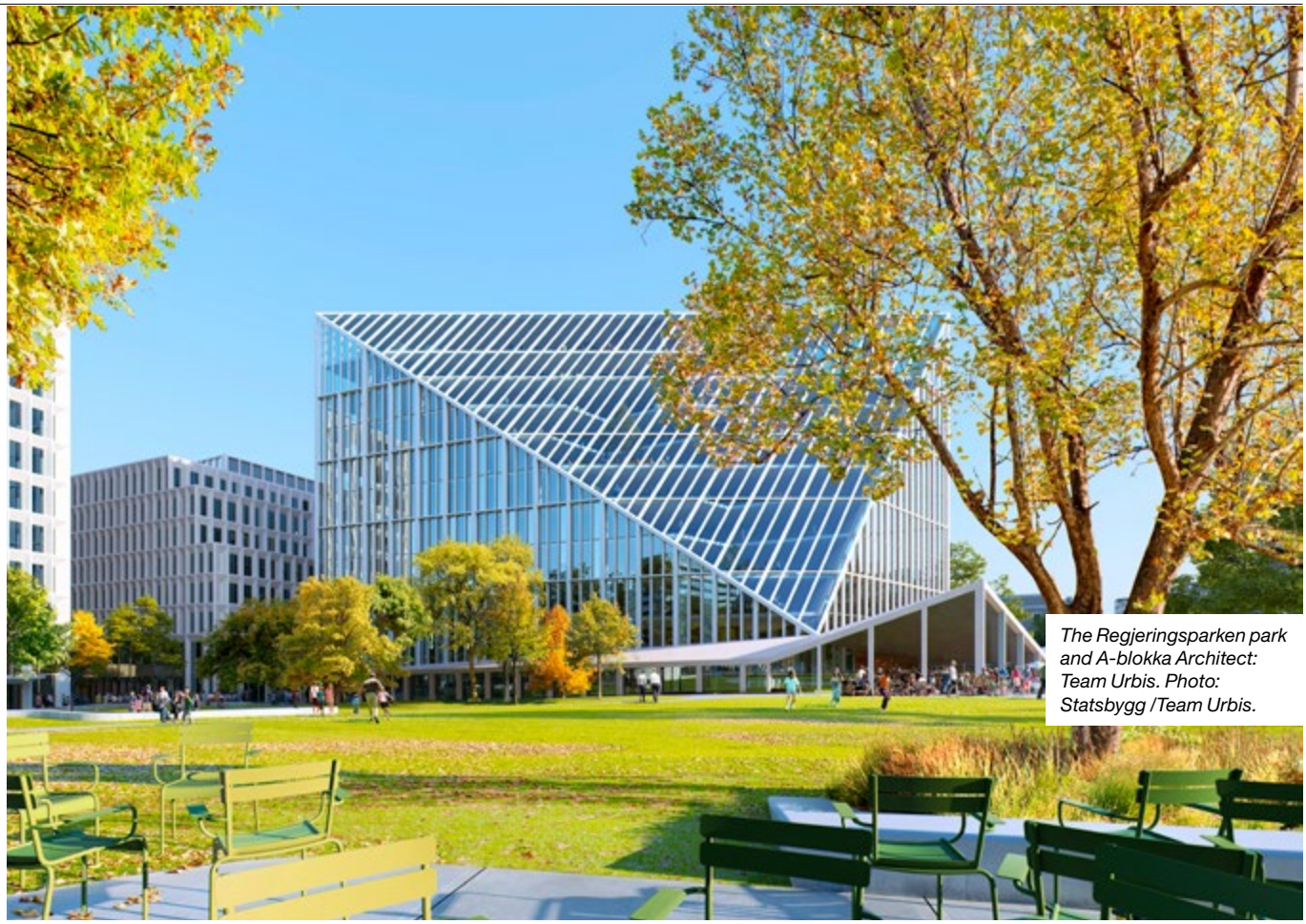
Address:	Essendropsgate 3 Boks 5491 Majorstuen NO-0305 Oslo
Telephone:	+47 22 85 35 70
Telefax:	+47 22 85 35 71
E-mail:	rif@rif.no www.rif.no

Continued increased concentration in the industry; 2018 is characterised by consolidation and strengthening of competitive ability

In Norway, there is a major concentration in the industry with six larger consulting enterprises. These now have over 75% of all employees in RIF. Growth in 2018 is largely characterised by organic growth. RIF companies have been good at hiring newly qualified engineers, scientists, social scientists and architects. We have seen some acquisitions; however, these are not characterised by restructured strategies in the industry. These have been acquisitions designed to bolster professional skills and/or local and international market positions.

Some interesting acquisitions and mergers in 2018:

- Norconsult AS has purchased 100% of the Norwegian architect firm Nordic – Office of Architecture, with approx. 200 employees in Oslo.
- WSP Norge AS has purchased the company UnionConsult AS in Oslo, with approx. 65 employees.
- The acoustics firm Brekke & Strand AS has purchased and merged with Sinus AS, with approx. 20 employees.



The Regjeringsparken park and A-blokka Architect: Team Urbis. Photo: Statsbygg /Team Urbis.

Perspective view of the life sciences building at the University of Oslo. Architect: RATIO arkitekter. Photo: RATIO/Statsbygg

INTERVIEW
SIRI BAKKEN
ASSOCIATION OF CONSULTING ARCHITECTS (CHAIRMAN), OSLO WORKS & NTNU

"I THINK WE ARE GOING TO SEE A MORE FORMALIZED REQUIREMENT OF PROCESS EXPERTISE IN PROJECTS"

The consulting engineering/architectural market is becoming increasingly consolidated and globalized. Larger companies grow bigger offering more services (competences) on more locations. Consulting engineers are integrating architects. Industrial engineers and consulting engineers are merging. The alternative seems to be remaining small and niched. Do you agree with this description?

I agree.

What is the advantage of integrating more competences within the same organization? And what are the challenges associated with this?

There are definitely many benefits to collecting different types of skillsets in the same organization and/or under the same roof. Our industry is interdisciplinary in its nature, in its process development, its production processes, and its social mission, and we should therefore consciously work to facilitate and create good meeting places and cooperate across the traditional disciplines.

This trend is on the one hand a logical consequence of the need for further professionalisation. However, to society at large, the fact that this may create less diversity in the market can also represent a challenge. We see a clear trend in calls for multidisciplinary project alliances in both larger, medium-sized and smaller projects. Companies that for various reasons are small, and perhaps even wish to remain small, may have very high levels of expertise and offer exciting innovations. Yet whereas the larger companies tend to prefer in-house expertise in their project groups, the smaller ones are facing significant challenges in terms of making themselves visible on the market.

Siri Bakken, Chairman in The Association of Consulting Architects in Norway, partner in Oslo Works and professor at NTNU/Department of Architecture and Planning, Faculty of Architecture and Design

How have business models changed in the last 10 years?

Business models are changing. On the one hand we see, as mentioned above, a greater call for greater alliances in projects and during the projecting phase. On the other hand, we also see an increasingly clear shift towards more value-based acquisitions and a wish for increased value creation as part of the processes. I consider this a positive trend.

Vast expertise is involved in the processes ranging from the initial project conception to the completed construction project, and much additional knowledge is generated along the way. New contract types are developed, where contractors are involved at an earlier stage in the process, enabling us to have an interdisciplinary teamwork process right from the early concept stage. Collaborative processes, where the client, authorities, project group, users and other stakeholders in the local community come together to find good solutions and obtain broad ownership, is becoming more common across Norwegian municipalities.

We should call for getting even more out of these processes. Both the project itself and everyone involved should be left with added value which goes beyond the original function requirements and performance targets. This could be a matter of various types of measurable benefits, but also things like, say, positive behavioural changes or innovations that are shared and utilized by larger groups of people.

I think that the public sector should also, at least for larger projects, set requirements for having a percentage of the construction cost set aside for research. This would create a systematic approach to the development of skills and expertise which could revolve around things like material innovation, construction, new process methods or outstanding and engaging architecture.

What changes in the industry do you expect we will see in the coming five years?

I think we are going to see a more formalized requirement of process expertise in projects; that is, interdisciplinary process managers who are specialized in bringing people together in engaging workspaces (also under great time constraints!) and seeing opportunities for value creation – not only within the industry's own goals, but also in terms of a broader social perspective. For it is only through seeing the significant potential the various processes and projects have in terms of being an arena for innovation, that we can bring the industry to the next level.

Architects, COWI, Aas-Jakobsen, Scenario interiørarkitekter and Per Rasmussen. Nordic - Office of Architecture has also been behind other major projects such as Gardermoen Airport and the world's largest airport in Istanbul. The new government quarter will be a dignified physical representation of Norwegian democracy, with beautiful architecture, friendly urban spaces and innovative work areas.

– When it comes to other major projects, I would also like to mention the life science building, Livsvitenskapsbygget, at the University of Oslo, says Skavang. This building, with its advanced equipment, will become a resource for the entire Oslo region, and will be a hub for interdisciplinary cooperation which can help to address major social challenges linked to public health and the environment. The proposal called "Vev" won the tender, and the project group is comprised of Ratio arkitekter AS (PGL / ARK), Erichsen & Horgen AS (RIEn / RIM, RIV), MOE A/S (RIB), Ingeniør Per Rasmussen AS (RIE) and architect Kristine Jensens Tegnestue AS (LARK).

Optimism among the architectural firms

Every six months, the Association of Consulting Architects in Norway conducts a survey among their members. The report on forecasted economic activ-

> "WE HAD THOUGHT THE GROWTH IN NORWAY WOULD LEVEL OFF, BUT THE GRAPHS ARE STILL POINTING UPWARDS."

ity for the second half of 2018 indicates that Norwegian architectural firms have high expectations for the future. However, the forecast center Prognosesenteret assumes that the market for the architects will level off in 2019, and continue to decline slightly.

High expectations for future turnover and an increase in the number of employees serves to boost the forecasted economic activity. There is also a great deal of optimism nationwide when it comes to hiring new staff, and the highest expectations for new orders are above all linked to housing, public buildings and planning.

The number of upcoming projects has increased, particularly among large and medium-sized architectural firms, and the proportion of firms experiencing growth is greater than the proportion which is downsizing. The number of new appointments in the architect industry has increased most in Oslo and in Western Norway, the latter having seen an upsurge in the upcoming projects in the past six months. "This is probably mainly due to the fact that the Western Norway region is experiencing an upsurge after a period of decline in the oil industry, while several major projects are being initiated in Oslo", says Skavang.

Norway is a leader in digitalization processes

–"The BIM system (Building Information Modeling) is actively used in the project planning for Norwegian construction projects. These processes are also subject to modernization, and we see that IDP (Integrated Project Delivery) and VDC (Virtual Design and Construction) systems as well as various forms for collaborative contracts are tested on a large scale. In May 2017, we conducted a survey to map the architectural industry's expertise in and use of BIM. We found that an entire 96 percent of the respondents use BIM in their construction processes. This may be part of the reason why Norway is leading the standardization work for BIM both in CEN and ISO", says Skavang.

About Arkitektbedriftene

Arkitektbedriftene i Norge (The Association of Consulting Architects in Norway) is the industry and employers´ organization for firms with practicing Architects, plus landscape and interior Architects in Norway.

As an association of consulting Architects, we will actively contribute to Norway having a qualified and competitive architectural industry that takes corporate social responsibility and provides services that meet the needs of the market and construction projects.

The association shall:

- **Provide tools and services that help increase business profitability**
- **Stimulate and follow up research and development for architecture and engineering**
- **Through our influence and our courses, assure top international quality in Norwegian architectural education**
- **Have an open, active and modern communication with our surroundings**

In order to achieve these goals, The Association of Consulting Architects in Norway embraces three strategies regarding:

- **The project Architecture creating value**
- **The future architectural market**
- **The future architectural firm**

Some numbers:
As of January 1, 2018, 591 architectural offices/527 architectural firms are members of the Association of Consulting Architects in Norway. 25 of theese are trainee offices. 70 are part of our collective agreement with AFAG and other trade unions. The companies have 4812 employees. 3825 of the employees are architects.

The administration consists of 7 permanent employees and three dedicated project managers. We are located in Essendropsgate 3 at Majorstuen in Oslo, where we are co-located with the Association of Consulting Engineers. We are also neighbours with the Norwegian Confederation of Enterprises, where most industry associations in the fields of buildings, facilities and real estate are located.

The Association organize several expert committees, whose members are employed at member offices. The expert committees are our most important professional resource. The committees work on themes central to our profession and they conduct research work and give input to the Association´s strategy and action plan. When a committee has delivered upon its mandate it is usually terminated or might be changed according to needs.

Egil Skavang, ARK

Organization number:	988 412 163
Visiting address	Essendropsgate 3 NO-0368 Oslo
Phone:	+47 22 93 15 00
E-mail:	post@arkitektbedriftene.no
Managing Director:	Egil Skavang
Communication Advisor:	Mona Bidne

Average payment for all cohorts

Statistics 2017	Number	Annual income NOK	Average examination year
Master	1869	724181	2002
Bachelor	181	625253	2003
Vocational school	102	598608	1994
Other	103	599594	1993
Total amount	2255	704870	2002

On the agenda for 2019

Among the important issues the Association of Consulting Architects in Norway will work with in 2019, is the EFTA Surveillance Authority's (ESA) ban on local accreditations for the construction industry. The Norwegian Ministry of Local Government and Modernisation has established an expert committee which will develop proposals for improving the current control processes until the end of 2019.

The Association of Consulting Architects in Norway will also look into bidding competitions for public procurement. During the competitive tendering processes, clients place great demands on architects, at great cost for those who enter into the bidding competitions.

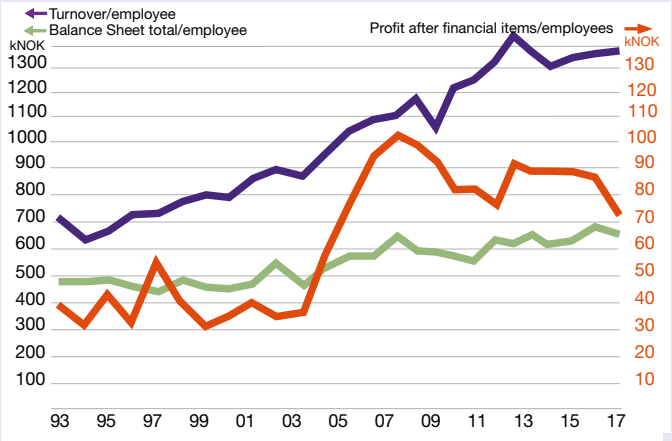
THE TOP 100 NORWEGIAN CONSULTING ENGINEERING AND ARCHITECTURAL GROUPS

	2018	2017	Group	Service	Annual report	Turn-over MNOK	(previous year)	Average number of employees	Tot. Balance sheet MNOK	CEO/Managing director
RIF/AB	1	1	Norconsult AS (acquired Monarken Arkitekter) *	MD	17	4695.0	4236.0	3300	2437.4	Per Kristian Jacobsen
RIF/AB	2	2	Multiconsult (incl LINK Arkitektur)	MD	17	3375.4	2968.0	2851	1811.1	Christian Nørgaard Madsen
RIF	3	3	Sweco Norway AS	MD	17	2021.9	2020.0	1694	956.2	Grete Aspelund
RIF/AB	4	5	Ramboll Norway AS	MD	17	1732.4	1587.0	1499	857.3	Ole Petter Thunes
RIF	5	4	COWI AS	MD	17	1675.1	1609.0	1236	640.3	Marius Weydahl Berg
RIF	6	6	ÅF Norway (acquired Mometo) *	M,E,Enr, I	17	1187.0	1124.0	738	650.0	Morten Jensen
RIF/AB	7	7	Asplan Viak koncernen	MD	17	1170.5	1089.0	1143	543.8	Øyvind Mork
RIF	8	8	Dr Ing A Aas-Jakobsen AS	CE, PM	17	823.3	750.0	179	349.5	Trond Hagen
	9	11	Metier OEC (fmr OEC, acquired by RPS Group) *	Enr,I,PM	16	800.0	270.8	250	163.0	Halvard Schie Kilde
RIF	10	10	WSP Norway (incl. Unionconsult) *	PM	17	766.0	433.4	546	390.0	Hilde Nordskogen
	11	9	Rejlers Norway (incl. Embriq)	E	17	763.0	691.0	350	450.0	Thomas Pettersen
RIF	12	12	Hjellnes Consult AS	MD	17	303.3	266.1	238	103.8	Geir Knudsen
	13	26	Insenti AS	PM	17	266.8	110.2	37	98.0	Bjørn Grepperud
AB	14	13	Nordic Office of Architecture *	A	16	225.0	220.6	179		Erik Urheim
AB	15	18	Snøhetta Group *	A	17	205.4	152.9	240	115.2	Frydenlund, Molinar, Greenwood
RIF	16	17	Erichsen & Horgen A/S	M	17	194.7	154.1	163	74.0	Arne Jorde
RIF	17	14	ViaNova-gruppen *	CE, Env, E	17	192.4	193.0	110	105.0	Syrtveit, Paulsen, Nilsen
	18	16	OPAK A/S	PM,Env,Enr,E	17	144.5	155.9	128	56.5	Jan-Henry Hansen
RIF	19	21	ECT AS	E	17	136.3	125.2	115	64.8	Dag Otto Winnæss
RIF	20	24	Dr. Techn Olav Olsen AS	PM,CE,Env	17	136.1	114.8	102		Olav Weider
	21	15	Techconsult AS	PM,I	17	129.2	165.1	49	44.3	Ronny Meyer
RIF	22	19	Holte Consulting AS	PM	17	128.9	135.0	54	41.1	Trygve Sagen
	23	27	Arcasa Arkitekter AS	A	17	115.3	105.7	62	55.0	Per Erik Martinussen
RIF	24	31	Structor Norway *	CE,E		106.0	83.0	70	40.0	Snippen, Horn, Sundfær m fl
AB	25		A-LAB AS	A	17	104.6	68.5	89	47.5	Geir Haaversen
RIF	26	35	Brekke & Strand Akustikk AS	Env	17	103.7	68.1	74	45.3	Ingjerd Aaraas
RIF	27		Trimble Solutions Sandvika	CE,M,E	17	102.0		59	79.6	Idar Kirkhorn
AB	28	38	Hille Melbye Arkitekter AS	A,PM	17	95.1	65.8	56	40.4	Anna Marie Christensen
	29	30	DARK Group *	A	17	93.0	89.2	77	22.2	Geir Gustav Hantveit
AB	30	34	Lpo Arkitekter As	A	17	92.3	77.7	80	30.1	Tom Roar Sletner
AB	31	33	Tegn 3 AS (ÅF)	A	17	83.3	79.1	74	31.8	Siri Hunnes Blakstad
	32	25	Atkins Norway (SNC-Lavalin)	Enr	17	81.4	111.6	69	79.2	Pierre Henrik Bastviken
	33	28	Semcon Norway *	I	17	80.8	94.5	63	27.9	Hans Peter Havdal
AB	34	23	Ratio Arkitekter AS	A	17	76.2	115.4	47	29.7	Per Anders Borgen
AB	35	37	Lund & Slaatto Arkitekter AS	A	17	75.2	65.9	52	47.5	Åse Helene Mørk
	36	20	Pöyry Norway As	I	17	73.7	132.5	62	32.9	Jon Terje Julsen
	37	49	Efla AS	MD	17	72.9	50.2	28	26.9	Ragnar Jonsson
AB	38	44	Tag Arkitekter AS	A	17	72.8	56.3	75	31.7	Lars Eirik Ulseth
	39	43	Mad Arkitekter *	A	17	71.2	58.9	66	29.0	Åshild Wangersteen Bjørvik
	40		NIRAS Norway AS	CE	17	68.1	19.6	46	35.2	Janne Marit Aas-Jakobsen
AB	41	41	Lund Hagem Arkitekter AS	A	17	66.8	60.0	54	29.7	Mona Anette Sævareid Carlmar
RIF	42	39	IPD Norway AS	PM, E	17	63.4	62.4	37	14.4	Aksel Østmoen
	43	32	Teleplan Consulting AS	E	17	59.1	81.5	24	23.8	Jan Haakon Gulbrandsen
AB	44	46	Niels Torp AS Arkitekter	A	17	58.3	54.1	44	48.2	Niels A. Torp
	45	29	Hipas Design AS	A	17	58.2	92.2	12	17.2	Kjell Magne Ruud
AB	46	45	Narud Stokke Wiig Sivilarkitekter Mnal As	A	17	56.5	55.3	44	26.2	Lise Rystad
AB	47	48	Dyrvik Arkitekter A/S	A	17	55.0	52.7	48	18.5	Halvor Bergan
	48	90	HMY Nordic AS	A	17	54.6	30.3	10	21.3	Troy Abrahamsen
RIF/AB	49	47	Nordplan AS	PM,CE,A	17	53.7	53.0	59	17.7	Arne Steinsvik
RIF	50	61	Grunn Teknikk AS	PM,CE	17	50.7	39.7	17	18.6	Geir Solheim
RIF	51	50	Bygganalyse AS	PM, CE	17	50.4	49.0	32	26.2	Frank Henry Roberg
RIF/AB	52	60	PLAN1 AS	CE,A,PM	17	47.2	40.5	28	22.0	Knut Andersen
RIF	53	36	Ingeniør Per Rasmussen AS	E	17	46.8	66.5	24	30.2	Per H. Rasmussen
AB	54	53	Abo Plan & Arkitektur As	A	17	46.5	46.2	45	19.8	Tommy Ingmar Hansen
	55	64	Grindaker AS	A	17	45.6	37.4	37	18.4	Per Heikki Granroth
AB	56	42	Arkitektkontoret Nils Tveit AS	A	17	44.6	59.4	17	17.3	Nils Martinius Tveit
AB	57	55	PKA - Per Knudsen Arkitektkontor AS	A	17	44.6	45.9	42	17.3	Reidar Klegseth
RIF	58	54	Prosjektutvikling Midt-Norge AS	PM,CE	17	44.0	46.1	36	20.2	Nina Lodgaard
AB	59	69	Metropolis Arkitektur & Design AS	A	17	43.9	35.3	29	15.4	Annette Dahl Franck
AB	60	57	Enerhaugen Arkitektkontor As	A	17	43.6	42.0	42	18.5	Bente Nygård
RIF	61	71	ElectroNova AS	E	17	42.8	35.0	23	28.0	Trond Einar Kristiansen
AB	62	59	OG Arkitekter AS	A	17	42.7	40.7	51	20.1	Osmund Olav Lie
AB	63	62	4B Arkitekter AS	A	17	42.0	39.0	41	19.3	Kari Linderud
	64	56	AMB Arkitekter AS	A	17	41.9	45.3	36	19.2	Michael Bowe
RIF	65	80	Løvlien Georåd AS	Env	17	41.9	32.5	16	16.0	Kristoffer Rabstad
RIF	66	63	Itech AS	M,E	17	41.6	38.8	26	16.9	Håvard Olsen Wiger
	67	58	HRTB Arkitekter AS	A	17	40.8	41.3	34	19.0	Tove-Christin Eidskrem

RIF = Member of RIF, the Association of Consulting Engineers, Norway. AB = Member of Arkitektbedriftene (architects association in Norway).
(*) = lack of conforming figure/proforma/assumed – = missing figure PM = Project Management,
A = Architecture, CE = Civil/Structural Engineering, Env = Environment, Enr = Energy, E = Electrical,M = Mechanical/HEVAC, I = Industrial, MD = Multi Disciplinary

	2018	2017	Group	Service	Annual report	Turn-over MNOK	(previous year)	Average number of employees	Tot. Balance sheet MNOK	CEO/Managing director
	68	83	Arkitektgruppen CUBUS AS	A	17	40.6	31.3	25	17.3	Odd Eilert H Mjellem
	69	120	Arkitema Architects	A	17	39.5	23.5	32	21.9	Chris Olborg
	70	67	Alliance Arkitekturstudio As	A	17	39.5	36.4	44	12.8	Asger Hedegaard Christensen
	71	65	L2 Arkitekter AS	A	17	39.2	36.9	24	22.3	Jon Flatebø
AB	72	109	HLM Arkitektur & Plan AS	A	17	39.0	25.4	23	19.3	Marie Louise Lekven
AB	73	52	Fabel Arkitekter (ØKAW Arkitekter)	A	17	37.9	47.8	24	14.8	Margrethe Benedikte Maisey
	74	66	Halvorsen & Reine AS (Arkitekterne)	A	17	37.8	36.7	23	21.6	Øystein Rognebakke (Chairman), Aina Lian
	75	88	AS Scenario Interiørarkitekter MNIL	A	17	37.4	30.6	28	14.7	Linda Steen
AB	76	85	Børve Borchsenius Arkitekter As	A, PM,CE	17	36.5	31.2	30	22.0	Jan Olav Horgmo
	77	73	SJ Arkitekter (Solheim + Jacobsen) AS	A	17	36.0	34.5	24	12.1	Anders Strange
AB	78	81	Iark As	A	17	35.7	32.1	29	15.7	Hanne Margrethe Kjelland Hjermann
AB	79	87	Kristin Jarmund Arkitekter AS	A	17	34.6	30.7	23	16.5	Rasmus Jørgensen
RIF	80	92	Roar Jørgensen AS	PM,CE	17	34.2	29.5	33	19.4	John Dæhli
AB	81	111	Reiulf Ramstad Arkitekter AS	A	17	34.0	24.6	24	30.1	Kristin Stokke Ramstad
RIF	82	72	Stener Sørensen AS	CE	17	33.8	35.0	24	9.3	Bo Reinhold Gunsell
	83	51	Techni AS	I	17	33.7	48.3	34	28.5	Dag Almar Hansen
AB	84	84	LOF Arkitekter AS	A	17	33.6	31.3	23	10.9	Annette Dahl Franck
RIF	85	98	Karl Knudsen As	PM,CE	17	33.3	27.5	23	15.9	Arnstien Garli
RIF	86	78	Fylkesnes AS	CE,PM	17	32.9	32.9	13	6.6	Geir Hansen
AB	87	91	PIR II architects AS	A	17	32.8	29.7	40	12.4	Inger Johanne Rushfeldt
	88	76	Bjørbekk & Lindheim AS	A	17	32.7	33.6	26	14.1	Line Løvstad Nordbye
	89	107	Arkitektfirma Helen & Hard AS	A	17	32.6	25.5	32	10.9	Randi Hana Augenstein, Anne Sofie Galåen Bentzen
RIF	90	89	Stærk & Co as	PM,CE	17	32.2	30.5	27	17.9	Jan Lindland
	91	82	Spir Arkitekter AS	A	16	32.0	31.9	28	11.5	Sven Gitlesen Krohn
RIF	92	86	Ivest Consult AS	CE	17	32.0	30.8	37	10.6	Jan Inge Hage
RIF	93	119	Sivilingeniør Godhavn AS	CE	17	32.0	23.5	20	70.9	Øyvind Estenstad
AB	94	79	AT Plan & Arkitektur AS	A	17	31.9	32.9	26	14.9	Mette Hoel
	95	115	Rambøll Oil & Gas AS	Enr,I	17	31.8	24.0	16	20.4	Jens Gregersen
	96	75	Ingeniørfirmaet Malnes Og Endresen AS	E	17	31.5	33.7	23	14.3	Roger Malnes
AB	97	96	Omega Areal AS	A	17	31.4	27.5	32	18.0	Gisle Heggebø
	98	97	Stein Halvorsen Arkitekter AS	A	17	31.4	27.5	22	15.1	Stein Halvorsen
RIF	99	124	Omega Holtan	CE	17	31.3	22.5	26	13.8	Ragnar Holtan
	100	93	Ysadesign AS	A	17	30.7	29.1	27	15.1	Anne Mari Gullikstad

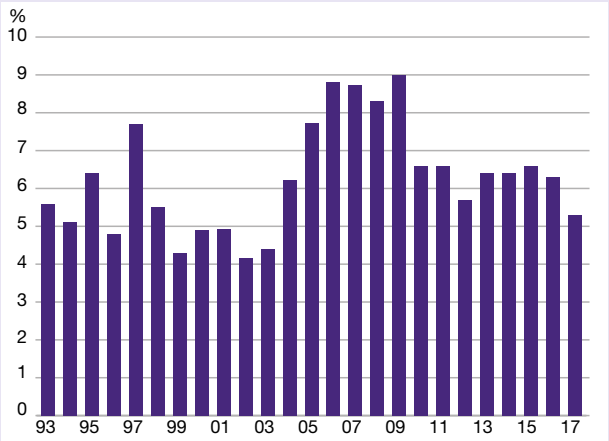
The top 30 Norwegian groups



Generally speaking, it is risky business making direct comparisons between key business ratios for the largest firms and corresponding figures for the medium and small-sized firms. In the case of the latter firms, the extensive efforts of the often many partners have a relatively significant impact on the companies' turnover and profit level per employee.

For firms 31–100 in the above list, turnover in 2017 increased by 7% to approximately NOK 3,128 million (NOK 3,006 million in 2016). The number of employees grew to 2,375 (2,330). The turnover per employee was NOK 1,355,000 (NOK 1,290,000). The profit before tax fell to NOK 117,000 per employee (NOK 136,000). Calculated in terms of profit margin, this gives 8.6% (10.5%). The average balance per employee was approximately NOK 650,000 (NOK 567,000).

Profit margins



Key business ratios 30 largest groups	2017	(previous year)
Turnover per employee	NOK 1,388,000	NOK 1,371,000
Profit after financial items per employee	NOK 73,000	NOK 86,000
Balance sheet total per employee	NOK 666,000	NOK 699,000

The turnover for the 30 largest groups grew by 13% to NOK 21,884 million (NOK 19,431 million in 2016). The average number of employees grew by 11% to 15,768 (14,173). The turnover per employee consequently increased to NOK 1,388,000 (1,371,000 the previous year). The profit before tax was NOK 73,000 per employee (86,000). The profit margin for the 30 largest groups in 2017 was thereby 5.3% (6.3%). The average balance per employee was approximately NOK 666,000 (NOK 699,000).

THE SEARCH FOR A NEW EQUILIBRIUM IN ICELAND

Economic growth in 2017 was around 4 %, which is a sizeable decrease from 2016, when it was measured as being 7,4 %. Economic growth in 2017 was, for the most part, supported by a high growth in private consumption and capital formation. Economic growth in the early part of 2018 continues to be strong, registering around 6,4 % which somewhat exceeds expectations and is considerably higher than the economic growth among Iceland's main trading partners, which was approximately 2.3 % during the same period. The output gap has been measured as being rather higher in 2018 than in the years prior, although most economic indicators seem to show that the growth has slowed down somewhat in the second half of the year. According to forecasts, the Icelandic economy is expected to cool down in the coming months.

2018 marks the ten-year anniversary of the deepest economic crisis that Iceland has experienced in half a century. The turnaround of the Icelandic economy has been miraculous since, with 2017 being the seventh year of continuous economic growth. During this period, GDP has increased by almost 30 % in real terms. The economic growth has, for the most part, been attributable to a significant growth in service exports through tourism with the number of tourists in Iceland having increased four-fold since 2010.

Increased resilience

The economic growth is expected to slow down in the next few years due to slower growth in exports and domestic demand. There are already signs of slower growth in investments and exports. In particular, there are signs of the tourism industry cooling off considerably.

Risks relating to the tourism industry are intertwined with many other economic sectors. There are, however, indications that the resilience of the economy against setbacks has grown over the years. Since 2009, the current account surplus has been considerable, or 6 % of GDP on average. This has resulted in a substantial increase in net national savings relative to GDP. The current account surplus, however, has diminished somewhat as of late, being 3.4 % of GDP in 2017, which is a hefty decrease from the year before, when it was almost 8 %. Forecasts predict that the trade surplus will be 1.3 % in 2018.

The foreign debt position of the economy has not been better for decades and has improved significantly during the present economic boom. The turnaround means that Icelanders are now net lenders with respect to foreign countries. The debt position of the public sector has improved significantly with debt levels falling from 126 % in 2011 to 74 % in 2017 relative to GDP. The most significant difference is the decrease in the sovereign's debt with debt levels falling around 50 % as proportion of GDP from 2011 to 2017. As a result, the sovereign's ability to counter shocks remains strong. The sovereign's debt as percentage of GDP has continued to decrease in 2018 being 31 % of GDP, falling by 4 % during the course of a year.

Household debt as proportion of disposable income has not been lower for almost 20 years – or 150 % of disposable income on average. Icelandic households are therefore better prepared for setbacks, and the sovereign's financial health is stronger than many dared believe. The high level of savings, trade surplus and the sovereign's ability to counter shocks provides a strong buffer to the next downswing.

The task of strengthening infrastructure

Iceland is a small, open economy that has been battling instability for years. As an example, during the past 15 years, few industrialized state has had as unstable an economic environment for its companies as Iceland. Fluctuations in the real exchange rate have, for instance, been greater here in Iceland during this period than in any other OECD country. It is clear that the competitiveness of the Icelandic industries can be improved with an economic environment that provides more stability, economy and efficiency. Wage costs, for instance, need to take productivity into account. Efficiency in the public regulatory and monitoring environment must be increased as well as discipline in economic management, with stability in mind.

The investment level in the economy was at an historical low after the economic downturn in 2008, or only around 15 % of GDP. This is far below what is needed to maintain the capital base as the foundation for value creation and lower than the average for the period 1990–2008, when the proportion was, on average, 23 %. Investments in civil engineering were negligible during this period, as capital formation for civil engineering in 2009–2013 was only around 60 % of the average of the preceding decades. Investments, however, have been rekindled recently and were approximately 22 % of GDP in 2017. The greatest increase was first in investments in the business sector, while in recent years, there has been a considerable increase in residential housing investments.

These fluctuations have been reflected in the scope of construction and civil en-

gineering works in Iceland. The share of the sector in GDP was only 4–5% during 2009–2015, while its share was 9–11% during 1997–2007. The proportion has reached 7.5% at present, and the sector has grown considerably in conjunction with the boom.

The fluctuations in the sector are much greater than in the business economy in general, something that is reflected in the number working in the sector and turnover together with profitability. The fluctuations are a negative influence, as they reduce productivity growth and value creation over the long term. It is of great importance to create an environment that is more stable, more efficient and more economical for these companies for the future.

The challenges before the sector over the next few years are considerable. Among these is the enormous lack of housing that has formed in the residential housing market. When the housing market began recovering in the present boom in 2011, a considerable surplus demand for housing had formed due to population increases and demographic aspects. Added to this is the growth of the tourism industry. The accommodation needs of tourists have in part been met with the growth of the peer-to-peer economy. The imbalance reached its peak last year when the population in Iceland increased by ten thousand but only 1,800 new apartments came on the market. There were, therefore, six new residents competing for each new apartment, while the number in 2016 was four. As a result, apartment prices in Iceland have risen in excess of wages making it ever more difficult for new apartment buyers to enter the market. The younger generation has borne the brunt of this trend.

The Federation of Icelandic Industries conducts a survey of the apartments under construction twice a year. The surveys of the Federation are the most reliable source of information on the conditions in the residential housing market each time. According to the Federation's autumn survey, there are around 5,000 apartments under construction at pre-

Ingolfur Bender, Chief Economist SI.

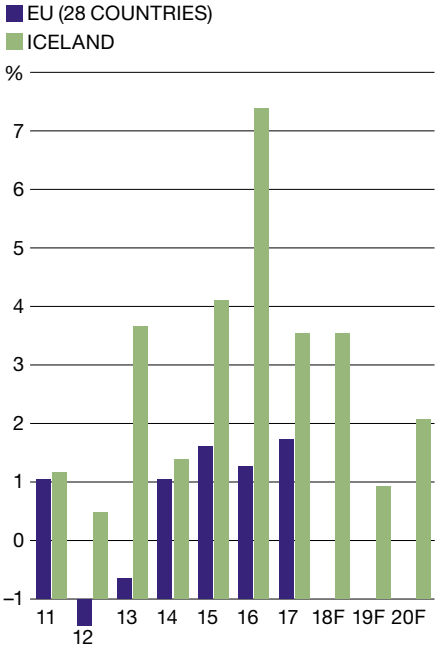
About FRV and SAMARK

FRV (The Association of Consulting Engineers) joined the Federation of Icelandic Industries (SI) in 2013 and SAMARK in 2014. Both are independent branch organizations within SI, which is a part of the Confederation of Icelandic Enterprise (SA) in Iceland. SAMARK and FRV are a part of one of the three pillars of SI – the construction industry. FRV has 22 member companies and SAMARK has 24.

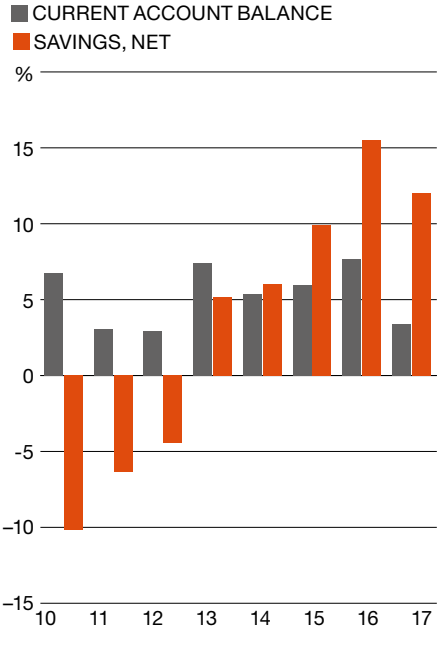
Eyrún Arnarsdóttir, manages the daily activities of both SAMARK and FRV.

Ingolfur Bender, Chief Economist SI

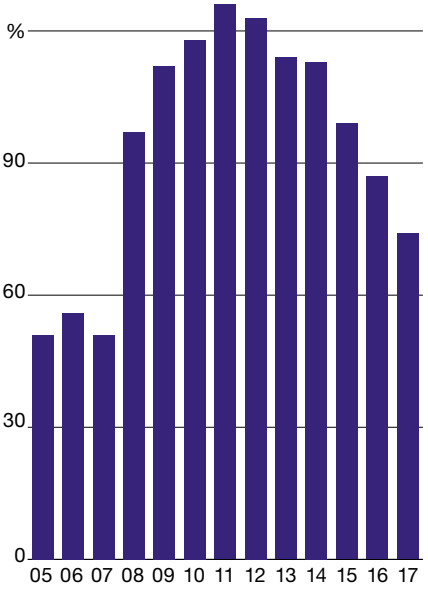
Gross domestic product, changes from previous year



Current account balance and national savings



General government debt



THE TOP 20 ICELANDIC CONSULTING ENGINEERING AND ARCHITECTURAL GROUPS

	2018	2017	Group	Service	Annual report	Turnover MISK	(previous year)	Average number of employees	Tot. balance sheet MISK	CEO/Managing director
FRV	1	2	Efla hf.	MD	17	6674.2	5922.1	339	2486.8	Guðmundur Thorbjörnsson
FRV	2	1	Verkís hf.	MD	17	5771.0	5960.6	322	1791.8	Sveinn Ingi Ólafsson
FRV	3	3	Mannvit hf	MD	17	5762.3	5743.8	292	2695.3	Sigurður Sigurjónsson
FRV	4	4	VSÓ Ráðgjöf ehf.	MD	17	1332.0	1233.0	74	478.0	Grímur Már Jónasson
FRV	5	5	Lota Consulting	CE	17	999.0	829.0	57	362.0	Pétur Örn Magnússon
FRV	6	6	Ferill ehf., verkfræðistofa	CE,PM	17	842.7	702.7	33	402.2	Ásmundur Ingvarsson
SAMARK	7	7	Arkís ehf.	A, PM, Env	17	740.8	612.0	32	283.3	Þorvarður Lárus Björgvinsson
SAMARK	8	11	Tark Arkitektar (Tark - Teiknistofan ehf.)	A	17	597.9	440.2	30	261.3	Ivon Stefán Cilia
FRV	9	10	Hnit hf.	PM, CE, Enr, E, Env	17	546.3	460.4	35	197.5	Harald B. Alfreðsson
SAMARK	10	8	THG Arkitektar	A, PM	17	539.0	513.1	34	267.0	Halldór Guðmundsson
FRV	11	12	Verkfræðistofa Suðurnesja ehf.	PM, CE, Enr, E, Env	17	412.8	392.9	21	149.8	Brynjólfur Guðmundsson
SAMARK	12	13	ASK arkitektar ehf.	A, PM	17	360.8	348.0	24	124.3	Páll Gunnlaugsson
SAMARK	13		Arkþing ehf	A	17	280.5	178.2	13	122.1	Hallur Kristmundsson
SAMARK	14		Landslag ehf	A	17	257.3	226.4	18	141.0	Finnur Kristinsson
FRV	15		Strendingur ehf.	CE,PM	17	243.6	182.5	12	42.5	Sigurður Guðmundsson
SAMARK	16	14	VA arkitektar	A	17	232.0	176.6	20	96.0	Indro Indriði Candi
SAMARK	17		Batteríið ehf.	A,CE,PM	17	216.9	177.6	15	55.0	Sigurdur Hardarson
SAMARK	18	15	Landmótun sf	A,Env	17	142.9	165.2	9	59.9	Áslaug Traustadóttir
SAMARK	19		ALARK arkitektar ehf	A	17	102.1	79.1	6	54.3	Jakob Líndal
SAMARK	20		Uti og Inni s.f. architects	A	17	100.2	84.2	4	36.4	Baldur Ó. Svavarsson

Key business ratios 20 largest groups	**2017**	(previous year, 17 groups)
Turnover/employee	18.82 MISK	18.32 MISK
Profit before tax/employee	1.75 MISK	1.63 MISK
Balance/employee	7.27 MISK	7.65 MISK

Turnover for the 20 largest companies in 2017 was 26,154 MISK (24,132 MISK the previous year, then 17 largest) and the average number of employees was 1,390 (1,317). The profit margin grew to 9.3% (8.9%).

sent in the greater Reykjavík area that will be put on the market over the next two years. The construction market has recovered after the decline during 2010–2015, when an average of less than 1,000 apartments were being constructed each year. It has been estimated that an additional 30,000 apartments need to be constructed until 2040 in the Reykjavík area, so it is evident that the construction pace of new apartments needs to be sped up. This is the major challenge that lies before the sector in the near future.

Many other issues in the field of infrastructure are unresolved. The recent report prepared by Félag ráðgjafarverkfræðinga (FRV) (Association of Consulting Engineers) and Samtök iðnaðarins (SI) (Federation of Icelandic Industries) on the condition and future prospects of infrastructure in Iceland (State of the Nation), showed that the road system and other infrastructure are in poor condition. The conclusion of the report states that the accumulated maintenance needs in infrastructure amounts to a little more than 15% of GDP to bring it to an acceptable level and where normal maintenance is sufficient to keep its condition unchanged.

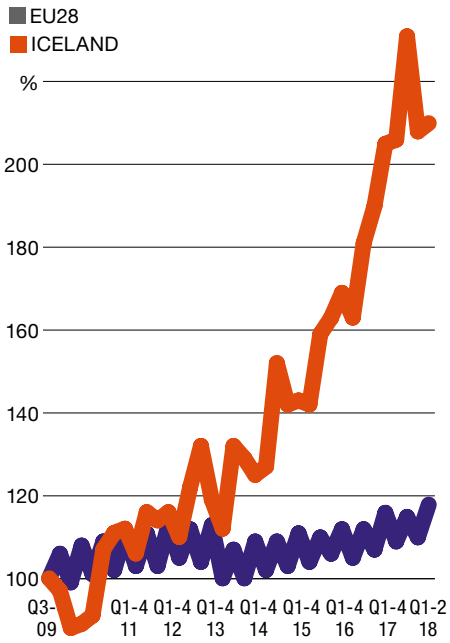
The competitiveness of the Icelandic workforce at risk

Wages in the Icelandic labour market have risen by almost 30% from 2015 to 2018, which is a great deal more than in the other European countries. Labour costs, therefore, have increased significantly in national currency. If the cost is converted into EUR, the view is even darker, as the Icelandic króna has appreciated almost continually since 2013. The interplay of wages and exchange rate movements has lessened the competitiveness of the export industries to a significant degree.

Despite these wage increases, inflation has remained low, and the Icelandic

> ECONOMIC GROWTH [IN ICELAND] IN 2017 WAS AROUND 4 %.

Euro wage index – Professional, scientific and technical activities



nation has experienced a significant increase in purchasing power as of late. Inflation remained under the 2.5% inflation target of the Central Bank of Iceland from the beginning of 2014 to 2018, the longest period of price stability since inflation targets were established at the beginning of 2001. This can, for the most part, be attributed to the significantly improved terms of trade due in part to the exchange rate strengthening of the króna and the low commodity prices in the global marketplace. In other respects, increased competition in the domestic market has reigned in inflation, with the attendant increase in purchasing power for the public in Iceland.

Increased uncertainty on the labour market

Unemployment measured 2.8% in 2017, the lowest level since 2007. There has also been some tension in the labour market. Labour participation was also considerable, or approximately 83%, which is in tune with the earlier high point in 2006. The labour needs of the economic growth in recent years has largely been met through the import of foreign labour. Foreign labour accounts for around half of the increase in the number of workers in the present economic boom.

There has been a significant increase in the number working in tourism and in construction and civil engineering in the present economic boom. The number of people working in characteristic sectors within the tourism industry has increased by up to 90% in this boom and 60% in construction and civil engineering. The increase in workforce needs, concurrently with this high economic growth, has for the most part been borne by the inflow of foreign citizens. The number of foreign citizens has more than doubled since 2011, while the increase in the number of Icelanders has been 5%.

Unemployment is currently on the rise and measured 3.6% in the second quarter of 2018. Increases in the number of total worked hours have slowed, and the inflow of foreign workers has levelled off. Much fewer companies feel that they experience a shortage of workers than before. It appears that the tension on the labour market and in the economy as a whole is lessening.

Wage agreements in the labour market for the majority of the workforce will expire before the end of the year 2018, and there is every indication of tough battles in the labour market in the near future. One of the largest unions has already made significant demands for those in the lower spectrum of the wage distribution. Unrest in the labour market, together with increased uncertainty regarding the growth of tourism, has led to depreciation of the króna, which has weakened considerably since the end of this summer.

Severe fluctuations are a problem

Turnover in the architecture and engineering sector has fluctuated much more than is commonly the case in the Icelandic economy, as their performance is for the most part dependent on the domestic market in the construction industry and civil engineering and utilities operations, which usually fluctuate a great deal through the business cycle.

Sectors in the field of architecture and engineering have not been immune to the wage increases in recent years, and services sold in 2017 were around 45% more expensive in EUR in 2017 than in 2014. Looking further back, one can see that the wages in the sector category of professional, scientific and technical operations have risen significantly in excess of what has been the norm in Europe in general.

These increases have had a greater impact on production costs and competitiveness than is the norm in other sectors in the economy due to the high proportion of wage costs of the total costs. The proportion of wage costs of total costs has been around and more than 60% in the engineering and architecture sectors, while the average in the Icelandic economy is around 25%. The export of engineering services and architecture companies has, at the same time, fallen significantly as the competitiveness of the sector has come under attack. It is of great importance to the Federation of the Icelandic Industries to seek every avenue to ensure efficiency, economy and stability in the sector for the future.

INTERVIEW
TRYGGVI JÓNSSON
CEO MANNVIT & CHAIRMAN OF FRV
ASSOCIATION OF CONSULTING ENGINEERS

"THE STATE OF THE NATION REPORT WAS SUCCESSFUL WHEN POLITICIANS DISCUSSED INFRASTRUCTURE INVESTMENTS"

How have business models changed in the last ten years? (Do you agree they have changed?)

The engineering sector in Iceland has been experiencing a strong economy with high investment level over the last several years. It is estimated that growth will continue but at a slower pace. Investment in energy and industry will likely slow down but will continue in infrastructure and buildings in the foreseeable future.

Our home market has been strong, making it more attractive for the smaller and medium sized companies. The real exchange of the ISK has appreciated continuously since 2013, making it ever more difficult for larger companies in Iceland to be competitive and operate across the border. This change along with lower investment level in energy and industry has forced the larger companies to rely more on the local market for infrastructure and buildings. That has made the local market very competitive.

Tryggvi Jónsson, CEO Mannvit & Chairman of FRV

We have seen a change in the market over the last several years where the line between the contractors and engineering firms is becoming more blurred. Moreover, the contractors have been entering the engineering market and the engineering firms have therefore been acting increasingly like a contractor, especially in procurement, project management, construction management and project development.

What are the main challenges for your company today?

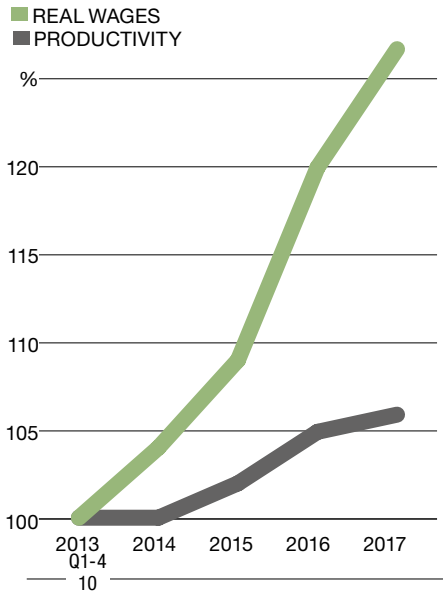
The largest uncertainty going forward here in Iceland is the labor market since most of the labor contracts will be re-negotiated this winter. The rapid increase in wages has been challenging for the engineering firms and will be even more challenging this winter. This uncertainty will affect the investment level this winter.

How has an increasingly international market place changed the industry or company?

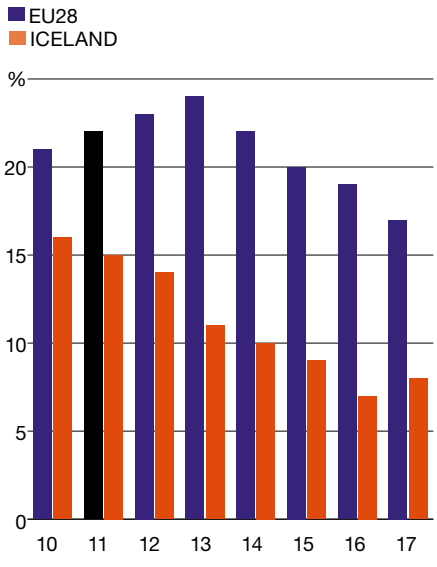
We have seen an increased interest from international companies entering the Icelandic market with Orbicon and Norconsult setting up their offices here in Iceland in 2017. The increase in tourism has been the main driver for the rapid economic growth and our strong economy over the last several years. This has put an ever more pressure on the government to increase investment in infrastructure. We are already seeing this increase around the airports specially around our main international airport which will likely be the investment hot spot for the years to come.

Félag ráðgjafarverkfræðinga (Association of Consulting Engineers) and Samtök iðnaðarins (Federation of Icelandic Industries) published the first "State of the Nation" report in the fall of 2017, just before the parliament elections. It was a major success and was used by all parties when discussing the condition of our infrastructure and necessary investment. The findings in our report were very similar to reports in other countries. Our energy production and distribution is in good shape but will need expansion. The condition of our public buildings is not good, that is also the fact for our public roads. With a huge increase in tourism our infrastructure needs to be improved. The state budget does not account for this necessary improvement which makes it obvious that other means of financing is needed to improve our infrastructure.

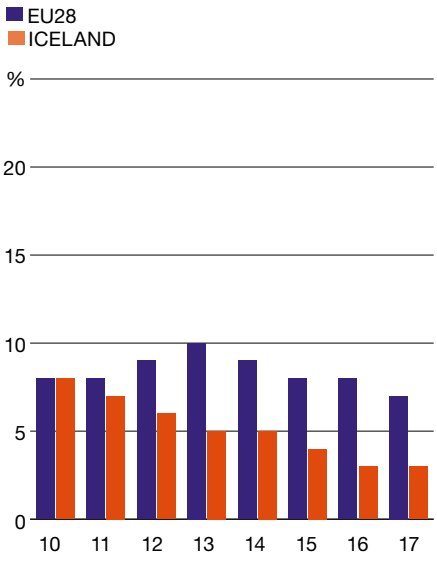
Wages and productivity



Unemployment rate, percentage of active population, less than 25 years old



Unemployment rate, percentage of active population, 25–74 years old



MARKET GROWTH STABILIZES IN FINLAND

Both domestic and export business turnover continued to increase in Finnish consulting business, but profitability stayed in low level. A shortage of professional staff is now considered the biggest obstacle to growth.

The turnover of consulting engineering companies (industrial, infrastructure and construction sectors) in Finland grew by 6 per cent in 2017 from 2016. Biggest increase took place in infrastructure sector, where invoicing grew by 30% from previous year. Industry sector's turnover grew by 15%, but building sector decreased almost 2 per cent.

Number of staff employed by member companies grew in 2017 from 17 000 to over 18 300 employees. The total turnover of Finnish operations of SKOL member companies increased to 1896 million EUR. The building sector invoiced 612 million EUR, the industrial sector 726 million EUR, the infrastructure sector 521 million EUR.

Bigger part of the growth came from domestic activity. Exports totaled 237 million EUR.

At the end of 2017 Ramboll Finland was again the largest consulting firm operating in Finland, followed by Sweco Finland (group), Neste Engineering Solutions, Etteplan, Pöyry Finland, Sitowise, Granlund, Elomatic, FCG and A-Insinöörit.

In January-July 2018, the turnover has continued to grow. Increase was up 5 per cent year-on-year.

Favorable development of order books has also continued between July and September in 2018 after a slight decline during the spring and early summer. However, new orders have already passed their peak. Most of the orders for the industry still come from Finland.

The consulting engineering companies that took part in the Federation of Finnish Technology Industries' comprehensive survey of order books reported that the monetary value of new orders between July and September was 12 per cent lower than in the preceding quarter, but 49 per cent higher than in the corresponding period in 2017.

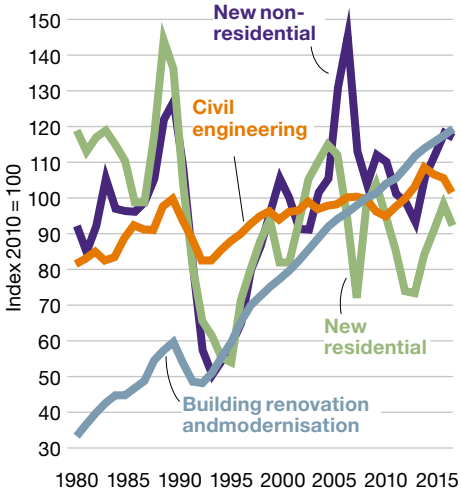
At the end of September in 2018, the total value of order books was 11 per cent higher than at the end of June, and 32 per cent higher than in September 2017. Judging from order trends in recent months, the turnover of consulting engineering companies is expected to be higher during the rest of the year of 2018 than in the corresponding period in 2017.

The number of personnel in consulting engineering companies in Finland grew by more than 8 per cent between January and September 2018 from the 2017 average.

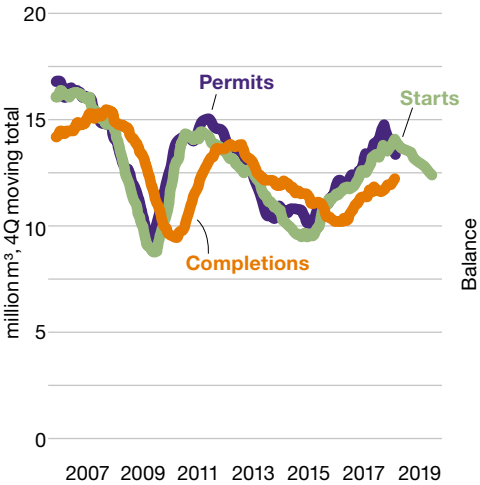
Construction growth rate to slow considerably next year in Finland

Finland's GDP grew by 3% in 2017. Supported by a higher employment, private consumption in home market has grown and the growth in world trade and economic expansion in most of Finland's main export markets have helped Finnish exports to recover.

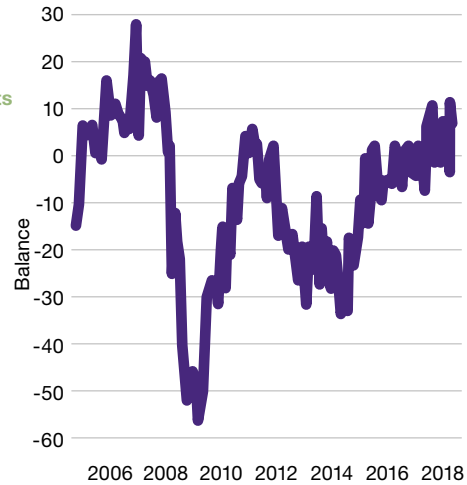
Construction volume in Finland 1980 – 2018



Building permits granted, construction projects started and completed for Residential Buildings in Finland 2006 – 2019



Confidence Indicator of Construction in Finland 2005 – 2018



Source: Macrobond/Confederation of Finnish Construction Industries RT

INTERVIEW
JYRKI KEINÄNEN
CEO,
AINS GROUP

"THE BIGGEST CHANGE WE WILL SEE IS **THE EMERGENCE OF TRUST"**

What is the advantage of integrating more competences within the same organization?

To begin with, it's a strategic business decision whether the business has an ambition for growth or not. Today, the opportunities for growth are very limited when operating in one or few niche consultancy areas. With multifaceted competences and broad service portfolio scaling up is easier and the growth is faster. Adding competences to the same organization generates also a platform for people's professional growth, as well as for new ideas and solutions.

It is good to note that integrating competences is not only important from the company point of view but essential on the industry level also. The current challenge in the real-estate and construction sector is that parties are working in silos. By integrating the delivery chain starting from the client, users and designers to engineers, contractors and maintenance people, we can achieve a lot of value in time, money and quality, and especially in innovations.

Jyrki Keinänen, CEO, AINS GROUP

How have business models changed in the last ten years? (Do you agree they have changed?)

In Finland, we have started to apply Integrated Project Delivery (IPD) models, and the same methodology is also used in the project alliances. This is, in my view, the only real change, and its pace is very slow. The volume of the IPD projects carried out in Finland during the last ten years sums up to around 4 billion euros. That is not much from the volume of the total construction market, which is about 30 billion euros yearly.

In the project alliances, we use a model called Target Value Design (TVD), where we as designers and engineers sit down with the contractor and the client to set the targets that are based on the value the client wants us to produce. But in general, we are too often asked to price our work on hours spent, and not asked what kind of value we can add by these hours.

What changes in the industry do you expect we will see in the coming five years?

What I foresee is that the integrated contract models will become more common and the digitalization will increase. The sophisticated technical solutions, for example in the areas of AI, are there, but we are not using them. To make change happen there must be forerunners. Here AINS Group is a willing volunteer: we want to give evidence to others how things can work better if we use different ways of working. As one example, some weeks back we received the Best Project of the World award for one of our projects, the Tampere Tunnel, where the alliance model was put to practice.

What impact will this have on the industry in years to come?

I'd say that among the forerunners the biggest change we will see is the emergence of trust. Currently we are missing opportunities because we don't trust each other's, and the traditional contracting models are supporting this. In the integrated world trust is the essence. If we can introduce mutual trust to the projects, we can see a lot of positive changes in the industry – in money, time, quality and innovations – for the benefit of all.

In 2018, economic growth is expected to slow down to 2.4%. Driven by demand, exports are set to grow and Finland will no longer lose market shares. Net exports will continue to support growth. Growth in employment will pick up and is set to reach one per cent in 2018.

Wages will rise more rapidly in 2018 and 2019. Unit labour costs will continue to increase, albeit more slowly than in our competitors, and there will be a further improvement in thecompetitiveness of Finnish industries.

For the first time in many years, the public debt to GDP ratio declined in 2016. Rapid growth in Finland's GDP will cause the debt ratio to shrink, and it is expected to fall below 60% in 2019. With slower economic growth and a continuous increase in age-related expenditure, there is a danger that the debt ratio will start growing again in the next decade.

Finnish economic growth will slow down to below two per cent in the future. In the next few years, the economy will be supported by foreign trade and domestic demand.

Finland's construction industries turnover increased by 8,4% in 2017. Growth has continued briskly over the last three years. The full-year growth rate forecast for 2018 was recently revised upwards. The Ministry of Economics construction experts' group expects construction output as a whole to be up by 3–4% this year.

Growth rate will slow considerably in 2019, particularly as a result of a decrease in housing construction. The forecast for construction growth in 2019 is in the range 1% to –1%.

The cubic metre volume of all building permits granted in the first six months of the year 2018 was down by 10% from the same period last year. Permits granted for housing were down by 12%. This turnaround in the permit figures signals a slow-down in construction. The forecast for housing starts this year is 42,000–44,000 units, and for 2019 a few thousand less than this.

Renovation and infrastructure construction will continue to grow, though at a slower rate. Growth in civil engineering works will be minor because the present Government's investment in key projects will end as the government term draws to a close. Construction work on healthcare and school buildings is expected to pick up again.

Although inflation is at very modest levels, investment costs in the construction sector are already rising at an annual rate of almost 5%. Construction costs have also increased. In July–August this year, these were up by almost 3% compared with the same period a year earlier.

According to figures from Statistics Finland, the unemployment rate in the construction sector has fell close to 6%

"THE CONSULTING ENGINEERING SECTOR GREW BY 6 % IN 2017."

The Finnish Association of Consulting Firms SKOL in brief

SKOL is the employer's association for independent and private consulting companies in Finland. SKOL has 165 member companies in the fields of industrial, building and infrastructure design and consulting, as well as management consulting and training.

SKOL members employ over 18 300 professionals in Finland, and approximately 8 000 outside Finland. The companies represent about a half of total sector capacity in Finland.

SKOL promotes professional, independent, sustainable and ethical consulting engineering, which provides best value to the Clients. SKOL looks after the interests of member companies in Finland and within EU, improves the operating environment of consulting engineering work in Finland and internationally, as well as builds up the brand and communicates the value of high quality consulting engineering.

THE MAIN TARGETS IN SKOL STRATEGY ARE:

- **SKOL companies are value adding partners by the Clients, and this is indicated by increased investment on high quality design and consulting.**
- **Finland is a good operating environment for design and consulting business and SKOL continues to proactively improve the business environment.**
- **Design and consulting business attracts the best young professionals who want to create sustainable and competitive future.**
- **SKOL speeds up the international business of its members.**
- **SKOL is known and appreciated as an integral part of Technology Industry.**

The activity areas and key actions in each area are listed below. More information about each topic is available at SKOL.

OPERATING ENVIRONMENT/POLICY

- **Influencing new legislation and other regulation**
- **Seminars for clients and stakeholders**
- **14 technical working groups meet regularly, about 200 active participants**
- **National consulting contracts**
- **Legal support to members**
- **Collective agreement (moderate salary increases, 24 hours of additional annual working time continued)**
- **Cooperation with technical universities and institutes: curriculum, intake, industry coop.**
- **Forums with Transport authority e.g. rail forum, top management meeting**
- **Statistics, market reviews, cost follow-up, guidance on fringe benefits**
- **Ad hoc polls on topics of interest**

ATTRACTION OF YOUNG PROFESSIONALS

- **Young consultants' forum seminars and get-togethers**
- **Participation in infra sector LIKE project with the aim to attract young staff**
- **Participation in Built Environment Young Professionals training programme KIRA-Academy**
- **Student events like "CEO crossfire" with technical university students**
- **Young Consultant of the Year-award**
- **Scholarships to students**
- **Participation in MyTech-platform www.mytech.fi/suunnittelu-ja-konsultointi – video inter-views of young consulting professionals**

PROCUREMENT

- **Innovative procurement road show together with clients, municipalities and politicians**
- **New national procurement guidelines for consulting services together with major clients**
- **Practical tools for quality based tender evaluation**
- **Preparation of scope of work lists for various consulting services e.g. www.sopimuslomake.net/lomakkeet/rt-10-10846-en**
- **Advising clients on good procurement practices**

COMMUNICATION

- **Branding member companies on quality, value for money, sustainability & responsibility**
- **Regular meetings with media, often together with board members**
- **Newsletters to clients and stakeholders**
- **Newsletters to members**
- **Storytelling workshops to board and spokesmen**
- **Articles on newspapers**
- **Strong communications and social media activity**

Helena Soimakallio, Managing Director SKOL.

- **New unified brand within all associations in Technology industries**
- **Export group/ forum for companies going international**
- **EFCA committees, GAM, FIDIC**
- **Lobbying at EU organisations on good procurement**
- **RINORD annual conference**
- **Nordic sector review**
- **Benchmark with other associations**

PROJECT WORK

- **Participation in Real Estate digitalization development project www.kiradigi.fi**
- **Integrated project delivery model development**
- **Activating the work of Lean Construction Institute Finland**
- **Building sector 3-year quality project together with construction industry and clients**

Helena Soimakallio, Managing Director SKOL

Postal address:	PO Box 10, FIN-00131 Helsinki
Street address:	Eteläranta 10, Helsinki
E-mail:	skolry@techind.fi
Phone:	+358-9-19231
	www.skolry.fi

which is significantly lower than the general rate of unemployment. A shortage of skilled labour is now considered the biggest obstacle to growth.

SKOL has a new strategy

In 2017 Finland celebrated a centennial of independence. SKOL gave a birthday present to the nation in form of vision report "Future of mobility", which was prepared in a series of open workshops in different cities on Finland. The final report was handed over to the minister of transportation in December 2017.

On the same year SKOL conducted a survey and a study about staff shortage. Results showed that industry would need at least 9 000 new professionals by the year 2025.

SKOL has continued to promote new guidelines of Public Procurement Act to the clients. The main incentive there is to courage clients to include quality criteria and innovative elements in their procurement processes. A road-show with the title "Smart public procurement" was conducted in six cities together with the Ministry of Environment and client organizations.

In 2018 SKOL has prepared a new revised strategy and working plan for the years 2019–2021. It includes ambitious objectives and initiatives in communication, influencing, members services and networking.

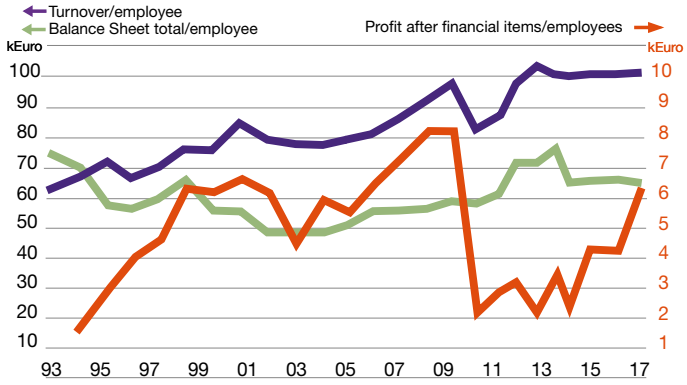
THE TOP 100 FINNISH CONSULTING ENGINEERING AND ARCHITECTURAL GROUPS

	2018	2017	Group	Service	Annual report	Turn-over MEUR	(previous year)	Average number of employees	Tot. Balance sheet MEUR	CEO/Managing director
SKOL	1	1	Pöyry Group	MD	17	522.9	529.6	4551	390.1	Martin À Porta
SKOL	2	4	Etteplan Oyj	I	17	215.8	183.9	2802	144.4	Juha Näkki
SKOL	3	2	Ramböll Finland	MD	17	206.0	200.6	2237	125.3	Kari Onniselkä
SKOL	4	3	SWECO Finland	I,MD	17	196.5	188.7	2046		Markku Varis
SKOL	5	5	Neste Engineering Solutions	I	17	170.7	153.9	886	74.2	Heikki Pikkarainen
SKOL	6	11	Sitowise Oy (fmr Sito & Wise Group)	MD	17	112.5	50.1	1253	105.8	Markus Väyrynen
SKOL	7	12	Citec Group *	I	17	95.0	48.3	1141	27.3	Johan Westermarck
SKOL	8	7	Granlund group	M	17	71.2	61.7	808	50.0	Pekka Metsi
SKOL	9	9	Elomatic Group Oy	I	17	64.5	54.7	869	53.4	Patrik Rautaheimo
SKOL	10	6	FCG Finnish Consulting Group	MD	17	62.6	79.0	743	51.4	Ari Kolehmainen
SKOL	11	10	A-Insinöörit Group	MD	17	59.4	54.2	636	30.0	Jyrki Keinänen
	12	8	Insta Automation Oy	I	17	58.3	60.0	387	23.9	Timo Lehtinen
SKOL	13	15	WSP Finland	MD	17	56.7	35.1	680	35.3	Kirsi Hautala
SKOL	14	14	Rejlers Finland	I	17	48.3	39.5	586	9.8	Seppo Sorri
SKOL	15	20	Deltamarin Oy	I	17	31.3	23.2	232	25.7	Janne Uotila
	16	22	Protacon group Oy *	I, E, PM	17	31.0	21.0	286	17.5	Timo Akselin
SKOL	17	16	Vahanen Group Oy	CE	17	28.6	28.1	296	13.8	Risto Räty
	18	30	Alte Oy (acquired TSS Group)	E	17	28.2	12.3	410	12.6	Juha Pekka Sillanpää
	19	17	Kiwa Inspecta Oy	I	17	28.1	25.9	312	41.6	Topi Saarenhovi
SKOL	20	19	Dekra Industrial Oy	CT	17	24.9	24.5	211	10.7	Matti Andersson
SKOL	21	18	ÅF Consult Oy	I	17	23.7	25.0	134	12.8	Jari Leskinen
	22	36	Mitta Oy	CE	17	23.3	21.5	268	15.2	Jari Lappi
	23	25	Insinööritoimisto Comatec Group	I, PM	17	20.5	19.3	278	15.4	Aulis Asikainen
	24	21	Econet Group Oy *	I,Env	17	19.7	21.7	60	11.1	Matti Leppäniemi
SKOL	25		Solwers Oyj (fmr Finnmap Infra + 3 companies)	CE	17	16.2		142	14.9	Leif Sebbas
	26	27	RD Velho Oy	I	17	15.9	13.9	160	6.0	Mika Kiljala
SKOL	27	33	NIRAS Finland Oy	I	17	15.2	11.2	46	9.8	Tor Lundström
	28	24	Haahtela Oy *	I,PM	17	15.2	19.6	80	19.5	Yrjänä Haahtela
SKOL	29	23	Destia Engineering	CE	17	15.2	11.3	49	8.1	Arto Niemeläinen
SKOL	30	26	Optiplan Oy	MD	17	14.2	15.7	183	7.6	Pekka Kiuru
	31	28	Raksystems Oy	PM, CE, S	16	13.3	10.3	160	3.4	Marko Malmivaara
SKOL	32	31	Rakennuttajatoimisto HTJ Oy	PM	17	13.1	11.5	121	4.8	Janne Ketola
SKOL	33	32	Suomen Talokeskus Oy	MD	17	11.5	11.4	113	3.5	Jari Punkari
	34	34	Helin & Co Architects	A	16/17	11.0	11.0	47	4.0	Pekka Helin
SKOL	35	35	Indufor Oy	MD	17	10.9	10.7	33	3.1	Silja Siitonen
	36	38	Arkkitehtitoimisto JKMM Oy *	A	17	10.5	9.3	61	4.4	Jaaksi, Kurkela, Miettinen, Mäki-Jyllilä (partners)
SKOL	37	51	KBR Ecoplanning Oy (fmr Chematur)	MD	17	9.6	5.8	11	6.1	Timo Kuusisto
SKOL	38		Eurofins Nab Labs Oy	Env	17	9.5		131	52.0	Jari Hietala
SKOL	39	40	AX-Suunnittelu Oy	M	17	8.3	8.9	86		Urpo Koivula
SKOL	40	42	CTS Engtec Oy	I	17	8.2	8.5	89	3.7	Antti Lukka
	41	43	Arkkitehtitoimisto SARC Oy	A	16/17	8.1	8.3	51	6.2	Sarlotta Narjus
	42	45	Pes-Arkkitehdit Oy (Pekka Salminen)	A	17	7.7	7.5	71	4.9	Jarkko Salminen
	43	47	Arkkitehdit Soini & Horto Oy	A	17	7.3	7.0	46	2.0	Santtu Rothsten
SKOL	44	44	Rapal Oy	PM	17	7.3	7.6	67	7.0	Tuomas Kaarlehto
	45	46	Insinööritoimisto Enmac Oy	I	16	7.2	7.2	71	3.0	Juha Ritala
	46	54	Oy Omnitele AB	PM(tele)	17	6.9	5.5	51	3.8	Ville Santeri Laakso
	47	52	Esju Oy	I	17	6.8	5.6	60	5.4	Matti Kainuharju
	48	49	Golder Associates Oy	Env	16	6.4	6.4	52	2.9	Kari-Matti Malmivaara
	49	55	L Arkkitehdit Oy (Arkkitehtitoimisto Larkas & Laine Oy)	A	17	5.9	5.1	49	2.6	Robert Trapp
	50	53	Indepro Oy	PM, CE	17	5.4	5.5	38	6.1	Matti Kruus
SKOL	51	58	Ideastructure Oy	CE	17	5.4	4.3	51	3.1	Jyrki Jalli
SKOL	52	57	Hepacon Oy	M	17/18	4.9	4.4	61	2.1	Otto Jokinen
	53	82	Asitek Oy	E	17	4.5	2.8	21	2.0	Rauno Mäkelä
SKOL	54	60	Aihio Arkkitehdit Oy	A	17	4.4	4.1	50	3.5	Timo Meronen
SKOL	55	59	Geotek Oy	Env	17	4.3	4.1	45	2.7	Aino Sihvola
	56	56	Cadpool Oy	MD	17	4.3	4.9	69	1.7	Upi Vartiainen
SKOL	57		Gaia Consulting Oy	M	17	4.3		46	1.7	Ulla Heinonen
	58	50	Architecture Office Sigge Ltd/ Viiva arkitehtuuri (Arkkitehtitoimisto Sigge Oy)	A	16/17	4.3	6.2	44	4.2	Pekka Mäki
SKOL	59	64	Insinööritoimisto Leo Maaskola Oy	M	17	4.1	3.6	40	2.0	Kari Seitaniemi
	60	72	Arkkitehtitoimisto Lukkaroinen Oy	A	17	3.8	3.1	47	1.4	Mikko Lukkaroinen
SKOL	61	68	Roadscanners Oy	CT	17	3.8	3.4	30	2.0	Timo Saarenketo
	62	66	Arkkitehtitoimisto Ala Oy	A	17	3.7	3.5	53	1.6	Juho Emil Grönholm
	63	65	Uki Arkkitehdit Oy	A	17	3.6	3.6	43	2.7	Mikko Heikkinen
	64	75	Linja Arkkitehdit	A	17	3.6	3.1	39	1.3	Ville Petteri Niskasaari
SKOL	65	70	Akukon Oy	MD	17	3.5	3.3	32	1.3	Ari Lepoluoto
SKOL	66	93	Plaana Oy	CE	17	3.4	2.3	33	2.9	Pekka Mosorin
	67	73	Arkkitehtuuritoimisto B & M Oy	A	17	3.4	3.1	29	1.3	Jussi Murole
	68	63	Re-Suunnittelu Oy - Re-Engineering Ltd	A, CE, PM	17	3.3	3.7	30	1.8	Matti Juhani Takkinen

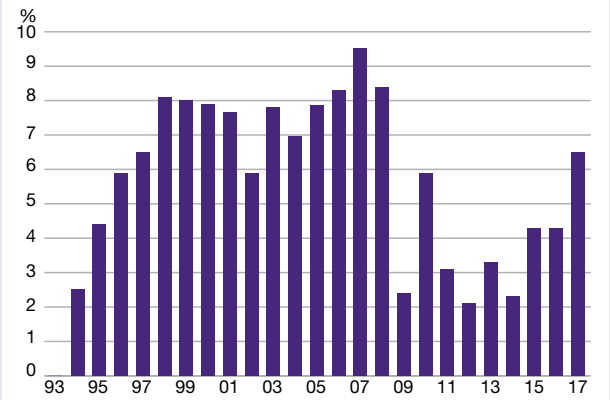
SKOL = Member of SKOL, the Finnish Association of Consulting Firms . (*) = lack of conforming figure/proforma/assumed – = missing figure PM = Project Management, A = Architecture, CE = Civil/Structural Engineering, Env = Environment, Enr = Energy, E = Electrical, M = Mechanical/HEVAC, I = Industrial, MD = Multi Disciplinary

	2018	2017	Group	Service	Annual report	Turn-over MDKK	(previous year)	Average number of employees	Tot. Balance sheet MDKK	CEO/Managing director
SKOL	69	61	Parviainen Arkkitehdit Oy	A	17	3.3	3.9	40	1.4	Mikko Lahikainen
SKOL	70	96	Sipti Oy (incl Sipti Infra)	CE	17/18	3.3	2.3	29	2.3	Harri Vehmas & Teemu Rahikainen
	71	71	Insinööritoimisto Pontek Oy	CE	16/17	3.3	3.1	27	2.7	Pertti Määttä
	72	81	Carement Oy	CE	17/18	3.2	2.9	37	1.2	Jouni Aukusti Juurikka
SKOL	73	78	Insinööritoimisto Lauri Mehto Oy	CE	17	3.2	2.9	29	2.1	Simo-Pekka Valtonen
SKOL	74	80	Insinööritoimisto Äyräväinen Oy	M	17	3.1	2.9	35	1.4	Mikko Äyräväinen
	75	76	AW2 - Architecture Workshop Finland Oy *	A	16/17	3.1	3.0	29	1.7	Anssi Yrjö Mikael Anttila
	76	85	Arkkitehtitoimisto Helamaa & Heiskanen Oy	A	17	3.0	2.7	30	2.9	Juha Saarijärvi
	77	163	YSP-Consulting Engineers Oy	E	17	3.0	0.9	29	4.0	Juha Pykälinen
	78	69	Cederqvist & Jäntti Arkkitehdit Oy	A	17	3.0	3.3	26	1.3	Tom Cederqvist
	79	77	LINK design and development Oy	I	17	2.9	2.9	38	1.1	Jaakko Anttila
SKOL	80		Green Building Partners Oy	Env,Enr	17	2.8		21	3.6	Keijo Leppävuori
SKOL	81	62	Insinööritoimisto Pohjatekniikka Oy	CE	17	2.8	3.8	33	0.2	Seppo Rämö
	82	108	Saraco D&M Oy	PM	17	2.8	2.0	20	1.1	Jukka Posti
	83	83	Insinööritoimisto Savolainen Oy	CE	16	2.7	2.7	29	1.4	Antero Savolainen
SKOL	84	104	Arkkitehtitoimisto Tähti-Set Oy	A	17	2.7	2.1	27	2.0	Toni Väisänen
SKOL	85	106	Insinööritoimisto Srt Oy	CE	17/18	2.7	2.3	20	2.4	Pauli Oksman
SKOL	86	97	Entop Oy	I	17	2.7	2.3	35	2.2	Kimmo Määttänen
SKOL	87	79	Hifab Oy	I	17	2.6	2.9	12	1.6	Vesa Kurkela
SKOL	88	107	Geopalvelu Oy	CE	16/17	2.6	2.0	44	1.4	Toivo Ali-Runkka
SKOL	89	89	Insinööritoimisto Tauno Nissinen Oy	E	17	2.6	2.5	28	1.9	Antti Danska
	90	90	BST-Arkkitehdit Oy	A	17	2.6	2.4	30	1.7	Paul Sergej von Bagh
	91	87	Arkkitehtitoimisto Hannu Jaakkola Oy (Jaakkola Architects)	A	17/18	2.6	2.6	21	2.5	Hannu Jaakkola
	92	98	Arkkitehdit NRT Oy (Nurmela,Raimoranta,Tasa)	A	17	2.6	2.2	30	2.8	Teemu Tuomi
	93	113	Gullstén - Inkinen Design & Architecture (Sisustusarkkitehdit Gullstén & Inkinen Oy)	A	17	2.5	1.9	25	3.0	Jari Inkinen
	94	74	Schauman Arkkitehdit Oy	A	17	2.5	3.1	30	2.8	Janne Untamo Helin
	95	88	Verstas Arkkitehdit Oy	A	17	2.4	2.5	24	1.4	Ilkka Salminen
	96	84	Geounion Oy	CE	17	2.4	2.7	31	1.7	Matti Mäntysalo
	97	184	Arkkitehtitoimisto Jukka Turtiainen	A	17/18	2.4		17	1.1	Jukka Turtiainen
	98	92	Insinööritoimisto Jormakka Oy	Enr,Env	16	2.4	2.4	20	3.1	Jussi Jormakka
SKOL	99	91	Yhtyneet Insinöörit Oy	E	17	2.4	2.4	26	1.3	Juha Kiviniemi
	100	99	Exact AIP-Mittaus Oy	CE	17	2.3	2.2	29	0.5	Jan-Erik Björni

The top 30 Finnish groups



Profit margins



Generally speaking, it is risky business making direct comparisons between key business ratios for the largest firms and corresponding figures for the medium and small-sized firms. In the case of the latter firms, the extensive efforts of the often many partners have a relatively significant impact on the companies' turnover and profit level per employee.

For firms 31–100 in the above list, turnover in 2017 decreased by 1 % to €336 million (€340 million in 2016). The number of employees grew by 2 % to 3,072 (3,011). The turnover per employee decreased to €101,000 (€113,000). The profit before tax increased to €12,700 per employee (€11,300). Calculated in terms of profit margin, this gives 11.6 % (10 %). The average balance per employee was approximately €76,900 (€63,200).

Key business ratios 30 largest groups	2017 (excl. Pöyry)	Previous year (excl. Pöyry)
Turnover per employee	€101k (€97k)	€100 (€101)
Profit after financial items per employee	€6.5k (€7.5k)	€4.1k (€6.4k)
Balance sheet total per employee	€65.8k (€60.1k)	€67.1k (€63.0k)

The turnover for the 30 largest groups in 2017 increased by 10 % to €2,291 million (€2,077 million in 2016). The average number of employees grew by 9 % to 22,722 (20,870). The turnover per employee was €101,000 (€100,000). The profit before tax was €6,500 per employee (€4,100 the previous year). The profit margin for the 30 largest groups improved to 6.5 % (4.2%). The average balance per employee was €65,800 (€67,100).

“THE PROFIT MARGIN (EBT) FOR EUROPE’S 200 LARGEST GROUPS WAS 4.8 % IN 2017.

Arnhem Centraal is the largest railway station in the city of Arnhem, Netherlands. Architects: UNStudio.

INTERNATIONAL DEVELOPMENT

The sector in Europe was strengthened in 2017, although profitability in the 200 largest groups in Europe was somewhat weaker compared with 2016. However, the basic data on turnover and profitability is incomplete. The profit margin (EBT) for the 200 largest companies in Europe was 4.8 % during 2017 compared with 5.3 % in 2016. It was nevertheless higher than the listing for 2015, which was 4.3 %.

The 200 largest engineering consultants and architectural firms in Europe had 576 230 employees in 2017. This is equivalent to a growth rate of 10 % compared with the 200 largest companies in 2016 (524 138). The ten largest groups together employed 200 287 staff, compared with 182 718 the previous year. So the sector continues to expand, a trend that is reinforced by consolidation with increasingly large corporate constellations. The profit margin (EBT) decreased to 4.8 % during 2017 from 5.3 % the previous year. The average profit margin declined from 6.1 % to 5.3 % in 2016 and the operating margin (EBITDA) decreased to 6.1 % during 2017 from 6.5 % the year before. The turnover per employee was EUR 118 000 during 2017 compared with EUR 121 000 the year before. The balance per employee dropped to EUR 850 000 in 2017 from the previous level of EUR 900 000 in 2016.

It must, however, be pointed out that the basic input data was incomplete. For certain companies there are no reliable figures on either turnover or profit. The calculations have been made on the basis of those companies whose figures were available.

European development

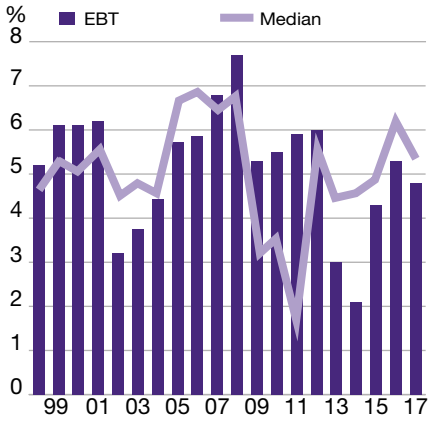
In surveys conducted by EFCA (the European Federation of Engineering Consultancy Associations), it has become evident among its member-associations during 2018 that the prolonged recovery after the financial crisis in 2008 has now ended in a stable sector on a European level. With one or two exceptions, the member firms from all countries gave witness in the latest report of a stable or good market in October 2018.[1] At the same time, an operating margin (EBITDA) of 7.9 % was reported for 2017 compared with 7.1 % during 2016. In other words, higher profitability figures than can be seen from the 200 largest companies in Europe. It is, however, difficult to compare the figures.

Development during the current year has continued to be positive and order volumes have become stronger throughout Europe. 12 out of 20 member-associations believed that there would be an improvement in order volumes over the coming six-month period. Only two member-associations believed the situation would become worse. Six countries predicted an improvement in operating margin for 2018, compared with 2017, and only one country (Norway) believed it would be worse. When it comes to expectations concerning profitability for 2019, only two countries believed in an improvement. The same number believed in a downturn in profitability. In other words, the remaining member organisations believed that profitability would remain unchanged.

By year-end 2018, it is likely that the profit and operating margins will have become stronger compared with the figures reported by the 200 largest companies for 2017. A number of countries have reported full order books and orders in hand during the year. The markets in Northern Europe have begun to level off and in Central Europe they have stabilised, whereas in the southern and eastern parts of Europe they are continuing to recover. When we look at the challenges facing companies in different parts of the

[1] The EFCA Barometer, autumn 2018. Efcanet.org

Profit margins: European top 200



The World's top 10 largest groups

2018	2017	Group	Country	Annual report	Average number of employees	(Previous Year)	Turnover (MEUR)
1	1	AECOM	USA	17/18	87000	87000	17865.2
2	2	Jacobs Engineering	USA	17/18	80800	66800	13281.9
3	3	SNC-Lavalin Group	Canada	17	52448	53000	6249.1
4	4	WSP Group	Canada	17	42000	36000	4741.3
5	5	Altran Technologies	France	17	33665	29106	2282.2
6	7	Alten Group	France	17	28000	24000	1975.4
7	6	Arcadis Group	Netherlands	17	27327	27080	3218.9
8	8	Worley Parsons Engineering Ltd	Australia	17/18	26050	22800	3275.7
9	9	Stantec Inc.	Canada	17	22000	22000	3510.5
10	10	Cardno Ltd	Australia	17/18	20000	20000	2665.4

In the case of the European firms the average number of employees per year is reported, whereas for the North American firms it is the total number of employees that is reported. Therefore, although the figures are not fully comparable, they at least give an idea of how the European groups stand in a global perspective.

A COMPARISION BETWEEN SOME INTERNATIONAL LISTED CONSULTANCIES. KEY RATIOS PER LATEST REPORTED FISCAL YEAR

Company	Country	**Market value 20181130 MEUR**	Last annual report	Market value last annual report	Turnover MEUR	Average number of employees	Turnover/ employee kEUR	Net profit MEUR	Net profit/ employee kEUR	Net margin %	Market value/ employee kEUR	P/e	P/s
Semcon AB	SE	**85.9**	171231	84.3	171.9	1992	86.3	7.1	3.55	4.1%	42.3	11.92	0.49
ÅF AB	SE	**1378.1**	171231	1364.5	1234.8	9292	132.9	72.4	7.79	5.9%	146.8	18.85	1.11
SWECO AB	SE	**2306.7**	171231	2112.7	1612.6	14530	111.0	119.1	8.20	7.4%	145.4	17.74	1.31
Rejlerkoncernen AB	SE	**120.0**	171231	100.1	241.0	1921	125.4	1.1	0.59	0.5%	52.1	87.73	0.42
Eurocon Consulting AB	SE	**25.4**	171231	29.6	23.1	244	94.6	2.1	8.58	9.1%	121.3	14.13	1.28
Hifab Group AB	SE	**15.1**	171231	18.0	43.3	310	139.8	1.3	4.10	2.9%	58.0	14.14	0.42
HiQ	SE	**299.1**	171231	353.3	174.4	1449	120.3	16.1	11.13	9.2%	243.8	21.91	2.03
Projektengagemang	SE	**78.1**	171231		114.2	988	115.6	3.6	3.69	3.2%			
Pöyry Group Oy	FIN	**418.3**	171231	289.3	522.3	4637	112.6	3.9	0.84	0.7%	62.4	74.17	0.55
Etteplan OY	FIN	**202.3**	171231	192.5	214.8	2802	76.6	11.5	4.09	5.3%	68.7	16.78	0.90
Multiconsult AS	NOR	**188.6**	171231	208.3	351.3	2851	123.2	8.3	2.91	2.4%	73.1	25.09	0.59
Costain Group Plc	UK	**442.9**	171231	558.4	1904.8	4008	475.2	36.9	9.20	1.9%	139.3	15.14	0.29
WYG PLC	UK	**36.8**	180331	28.8	172.9	1641	105.4	-5.7	-3.45	-3.3%	17.5		0.17
RPS Group	UK	**381.8**	171231	670.6	713.3	5340	133.6	-18.9	-3.53	-2.6%	125.6		0.94
Aukett Swanke Group plc	UK	**2.2**	180930	4.2	20.8	246	84.6	-0.4	-1.47	-1.7%	16.9		0.20
Ricardo plc	UK	**434.6**	180630	579.5	429.8	2852	150.7	21.3	7.46	4.9%	203.2	27.25	1.35
Arcadis	NL	**962.3**	171231	1648.0	3218.9	27327	117.8	70.8	2.59	2.2%	60.3	23.28	0.51
Fugro	NL	**869.5**	171231	1051.7	1497.4	10044	149.1	-165.0	-16.42	-11.0%	104.7		0.70
Bertrandt AG	D	**748.8**	170930	859.6	992.3	12970	76.5	43.9	3.38	4.4%	66.3	19.59	0.87
EDAG Engineering	CH	**379.4**	171231	317.2	618.6	8404	73.6	12.4	1.47	2.0%	37.7	25.66	0.51
Alten Group	FR	**2680.2**	171231	2322.0	1975.4	28000	70.6	147.0	5.25	7.4%	82.9	15.79	1.18
Altran Technologies	FR	**2252.8**	171231	3570.0	2282.2	33665	67.8	139.7	4.15	6.1%	106.0	25.56	1.56
Assystem S.A.	FR	**431.3**	171231	453.6	395.2	4832	81.8	12.8	2.65	3.2%	93.9	35.43	1.15
S II A.A.	FR	**424.7**	180331	479.9	560.9	7566	74.1	25.8	3.41	4.6%	63.4	18.60	0.86
Sogeclair S.A.	FR	**49.6**	171231	131.6	147.3	1445	102.0	5.5	3.81	3.7%	91.1	23.88	0.89
AKKA Technologies S.A.	FR	**1091.4**	171231	910.5	1334.4	15515	86.0	39.3	2.53	2.9%	58.7	23.20	0.68
Soditech S.A.	FR	**2.1**	171231	2.5	5.4	71	75.5	0.3	3.66	4.9%	34.9	9.54	0.46
INYPSA	ES	**136.9**	171231	149.2	27.5	206	133.7	0.0	0.05	0.0%	724.4		5.42
Ansaldo STS	IT	**2542.0**	171231	2410.0	1361.0	4228	321.9	65.0	15.37	4.8%	570.0	37.09	1.77
Average Europe							**106.8**		**3.23**	**1.8%**	**100.3**		**1.02**
Tetra Tech, inc.	US	**2839.5**	180930	3181.4	2494.5	17000	146.7	115.2	6.78	4.6%	187.1	3.20	1.28
Hill International, Inc	US	**152.9**	171231	254.8	407.1	2856	142.5	-5.8	-2.02	-1.4%	89.2		0.63
AECOM Technologies, Inc.	US	**4248.7**	180930	4314.7	16962.0	87000	195.0	114.8	1.32	0.7%	49.6	4.35	0.25
Jacobs Engineering	US	**7859.7**	180930	9155.8	12610.4	80800	156.1	136.9	1.69	1.1%	113.3	7.75	0.73
SNC-Lavalin, Inc.	CAN	**5728.9**	171231	6535.4	5972.9	52448	113.9	249.4	4.75	4.2%	124.6	3.92	1.09
Stantec, Inc.	CAN	**2355.9**	171231	2616.3	3355.4	22000	152.5	63.3	2.88	1.9%	118.9	6.17	0.78
WSP Global	CAN	**4405.5**	171231	4034.4	4531.7	42000	107.9	139.2	3.32	3.1%	96.1	28.97	0.89
Average North America							**152.4**		**2.67**	**1.8%**	**99.0**		**0.81**
Cardno Ltd	AU	**310.8**	180630	382.8	705.0	20000	35.3	-8.9	-0.44	-1.3%	19.1		0.54
Worley Parsons	AU	**3847.6**	180630	5095.2	3050.5	26050	117.1	39.3	1.51	1.3%	195.6	19.97	1.67

The currencies used to calculate the figures in the table above represent the average exchange-rates of the period Jan–Oct 2018, as below:

1 NOK = 1.0701 SEK 1 CAD = 6.6916 SEK 1 USD = 8.6267 SEK
1 AUD = 6.4848 SEK 1 EUR =10.2509 SEK 1 GBP = 11.5974 SEK

Source: DowJonesFactiva

The figures in the table above are presented according to the respective companies' annual reports, any acquisitions made during the current year are not included.

> THE OPERATING MARGIN (EBITDA) OF THE 200 LARGEST GROUPS WAS 6.1 %.

Continent, the problems are similar. The greatest challenge since the EFCA surveys were initiated, is low fee levels. Lack of personnel is also a growing challenge at the same time as the lack of projects is declining in importance. Both the indicators give evidence of a stable sector.

Europe's largest groups

It is still Altran, Alten and Arcadis that top the chart for the largest groups in Europe. Consolidation of the sector continues, but there have perhaps not been as many major acquisitions this year as in previous years. The North American groups continue to take market shares in Europe. Otherwise, it is French, British and German groups that are among the largest groups in Europe. The Nordic companies are well-represented among Europe's largest groups. 42 of the 200 largest are Swedish, Finnish, Norwegian, Danish or Icelandic. The largest among the Nordic groups is, as usual, Sweco (9th), Ramboll (14th), ÅF (19th) and COWI (22nd).

Sector development

Consolidation within the sector is likely to continue in the coming years, when globalisation speeds up and is made simpler by digitalisation. Internal systems and processes are being developed in parallel, which permits a more effective use of resources. Companies will in this way be able to take on and solve increasingly complex tasks. A local and regional presence will probably continue to be important in the future, but resources can be used globally. The advantages of consolidation will then be increasingly clearer. The capacity to solve problems will be improved in step with globalisation, consolidation and digitalisation. The world has many problems to solve, so there is no lack of challenges for the companies in the sector!

DAVID CRAMÉR
MARKET ANALYST
SVENSKA TEKNIK
&DESIGNFÖRETAGEN
DAVID.CRAMER@STD.SE

INTERVIEW
KAJ MÖLLER
CEO SWECO
INTERNATIONAL

THE COMPLEXITY AND CAPACITY MAY LEAD TO **AN INCREASE IN THE NEED FOR THE PROBLEM-SOLVING ENGINEER**

What general trends do you see in the engineering consultancy sector today on an international level?

We see a number of trends on the international market. There is a demand for a knowledge of sustainability on all markets, both within urban planning assignments in Asia's tiger economies and industrial projects in Europe as well as in infrastructure projects in developing countries. Swedish competence in the realisation of sustainable energy, transport or industrial solutions is gaining considerable international attention. There are many international engineering consultancies that can visualise smart and sustainable ideas, but there are very few countries that can come up with solutions for reduced water consumption, higher levels of waste recovery or reduced emissions of CO2.

We can also see that innovative and green procurement is beginning to gain strength. The World Bank recently updated its procurement policies and among other things added new selection criteria concerning innovation and sustainability. They will almost certainly be followed by a number of public players.

Competition within traditional engineering services is increasing, above all in the Nordic countries, where several southern European companies are beginning to establish operations. India has started with its establishment preparations and is closely followed by China.

Globalisation and consolidation have been under way for many years in the sector. Will the industry orient its activities in a uniform way internationally, or in other words will we receive the same supplies in the Nordic area, Europe, North America, Africa and Asia?

It is our ambition not to contribute to any form of uniformity within the sector. Within Sweco's export operations we talk a lot about our nationally unique areas of competence – what they are, what we should do to refine the existing areas and what the future areas are. Sweco is currently conducting operations in fourteen European domestic markets, and most of them represent areas of competence that are unique to the country in question, which we are constantly endeavouring to sharpen even more so that we can offer our clients the best possible services. As an example, Sweco in Sweden is currently successfully carrying out sustainable urban and rural development planning all over the world. Sweco in the Netherlands is enjoying export successes in the field of flood management, and Sweco Norway is successful in hydropower. Northern Europe is a coveted market, not only because the market is good but also because we are able to realise many good ideas here.

Kaj Möller, CEO Sweco International

The challenges facing the sector in the Nordic countries are above all a lack of competence and a weak development in prices. Is the situation the same in other places?

The situation is different in different parts of the world. In the southern part of Europe there is no connection between a lack of resources and low-price levels. Demand there is weak, which results in falling prices. In many parts of the expanding Asian markets, the level of innovation is low and firms compete with similar offers and consequently the same price scenario. In the Nordic countries I see the situation as being more a lack of resources than a shortage of skills. It is a matter of succeeding in linking skills to the knowledge structures of architectural and engineering consultancy organisations in order to promote creativity in the solutions. We are now seeing more procurements in which the evaluation criteria give more consideration to expertise from the companies' own ranks, working methods

and systems that hold together teams and coordinated capacity that may be flexible and, for example, cope with large volume fluctuations in assignments, which we welcome.

Which unique values – if any – do Swedish/Nordic consultants offer when working internationally?

Sweden has an extremely strong brand name globally in the field of sustainability. It is not merely a question of sustainable technical solutions within the public sector, but also sustainable industrial processes, sustainable land use, the sustainable use of resources and raw materials, and sustainable rehabilitation. A consistent implementation that is accompanied by a sustainable way of thinking throughout the entire project execution is the strongest component of the Swedish brand name for architects and engineering consultancies. The Swedish government has set the ambition that Sweden shall be the world's first fossil-free economy among the developed countries by the year 2040, and to achieve this goal, fantastic innovations will be created in the areas of transportation, energy and industrial production. This will provide important export opportunities for Swedish engineering consultancies in the future.

Assessments and methods in connection with anti-corruption is another area in which Swedish experts make a tangible footprint when we perform international assignments. Swedish consultants often work in difficult CSR-environments and are experienced as being reliable, credible and as having control over the ethical compass.

What will the sector be like in ten years' time? Consider corporate structure, and size and business models.

The consolidation will continue and become even more international. Our clients will make higher demands on both sustainability goals, level of innovation and capacity. Major public investments are just around the corner to enable Sweden to further develop its high service level and cope with the change to a fossil-free society. It will require an increase in capacity within the sector, something that will be solved by both an increase in efficiency and more international partnerships.

Digitalisation is an important factor and affects our clients as well as the way we work on our assignments. Cloud solutions, BIM and AR are already more the rule than the exception.

As regards the business models for consulting operations, the complexity and the capacity could mean that the need for problem-solving engineers increases. We can see already that we need more advisers for our customers. Consequently, current account should be retained as a form of payment for as long as the work input and level of difficulty are difficult to define.

THE TOP 50 EUROPEAN ARCHITECTURAL GROUPS

2018	2017	Group	Country	Annual Report	Average number of employees	(Previous year)	Turnover MEUR
1	1	Foster & Partners Ltd	England	17/18	1423	1480	
2	2	AEDAS Architects Group *	England	17/18	1400	1400	279.3
3	7	Sweco Architects (incl. Årstiderna Ark)	Sweden	17	1096	629	137.4
4	3	BDP Building Design Partnership	England	17	954	903	100.1
5	8	Broadway Malyan Ltd	England	17	821	612	76.4
6	4	Rambøll Architects & Urban Planning *	Denmark	17	800	835	
7	6	ATP Architects Engineers	Austria	17	700	650	75.8
8	5	White Architects	Sweden	17	680	682	89.6
9	9	Tengbom group	Sweden	17	677	603	68.8
10	12	Gmp Architekten von Gerkan, Marg und Partner *	Germany	17	606	500	
11	10	AIA Life Designers*	France	16	600	600	
12	11	IDOM (Architecture)	Spain	17	545	510	55.0
13	15	Grimshaw Architects Llp	England	17/18	539	435	80.9
14	14	Benoy Limited (Architects)	England	17	489	461	56.7
15	21	LINK Arkitektur AS	Norway	17	486	372	51.0
16	13	Arkitema (COWI)	Denmark	17	477	466	52.5
17	19	HPP Architects	Germany	17	420	377	39.3
18	16	Herzog & de Meuron Architekten AG *	Switzerland	17	400	380	
19	17	Burckhardt+Partner AG *	Switzerland	17	360	380	
20	20	Sheppard Robson *	England	16/17	352	374	22.0
21	22	Chapman Taylor LLP	England	16/17	350	350	40.9
22	23	HENN Architekten	Germany	17	350	341	35.9
23	43	RKW Architekten & Co, KG *	Germany	17	350	220	
24		Norconsult Arkitektur (incl. Monarken) *	Norway	17	346	265	44.1
25	18	Zaha Hadid Architects	England	16/17	345	379	52.8
26	28	Arup associates, architects *	England	17	337	301	
27	24	Barton Willmore Group	England	16/17	336	329	
28	26	INBO Architects/Consultants *	Netherlands	17	330	308	
29	25	Stride Treglown Group PLC	England	17	319	321	25.2
30	35	Pascall+Watson	England	17	317	271	44.5
31	33	Heinle, Wischer und Partner *	Germany	17	310	280	36.2
32	27	Purcell Architects	England	17	302	302	24.3
33	29	Allies and Morrison Architects Ltd *	England	17	300	300	
34	39	O.M.A. Office for Metropolitan Architecture *	Netherlands	17	300	247	
35	32	PRP Architects Ltd *	England	17	292	292	
36	31	C.F. Møller Architects	Denmark	17	286	297	40.8
37		ÅF (SandellSandberg, Koncept Sthlm, Gottlieb Paludan) *	Sweden	17	278	109	38.9
38	34	Henning Larsen Architects	Denmark	17/18	278	275	38.9
39	40	Wilmotte & Associés *	France	17	270	240	
40	42	Tyréns (incl. Pyramiden & AQ arkitekter) *	Sweden	17	250	230	
41	44	Valode & Pistre *	France	17	250	220	
42	37	Aukett Swanke Group plc	England	17	246	267	21.0
43	36	Scott Brownrigg Architects	England	17/18	241	246	24.2
44	48	MVRDV *	Netherlands	17	240	199	
45	51	Snøhetta Group *	Norway	17	240	180	21.4
46	38	IBI Group Europe *	England	17	230	254	22.6
47	41	PE Arkitektur, incl. Temagruppen & Novamark	Sweden	17	229	237	28.8
48	30	BIG / Bjarke Ingels Group *	Denmark	17	216	300	44.6
49	47	UNStudio (Van Berkel En Bos) *	Netherlands	17	210	200	
50	46	Rogers Stirk Harbour & Partners	England	16/17	209	204	37.4

THE EUROPEAN TOP 200 CONSULTING ENGINEERING AND ARCHITECTURAL GROUPS

2018	2017	Group	Services	Country	Annual report	Average number of employees	(Previous year)	Turnover MEUR	CEO/Managing director
1	1	Altran Technologies	I	France	17	33 665	29 106	2282.2	Dominique Cerutti
2	3	Alten Group	I	France	17	28 000	24 000	1975.4	Simon Azoulay
3	2	Arcadis Group	MD	Netherlands	17	27 327	27 080	3218.9	Greg Steele
4	5	Jacobs Engineering Europe (incl. SKM) *	Env,Enr	UK	17	19 000	15 500	2795.2	Robert S. Duff
5	6	WSP Europe (figures for EMEA)	MD	UK	17	16 500	15 000	1478.4	Magnus Meyer
6	4	AECOM Europe *	MD	UK	17	15 900	16 110	2008.0	Lara Poloni
7	7	Mott MacDonald Group	MD	UK	17	15 531	14 926	1767.1	Keith Howells (chairman), Mike Haigh (CEO)
8	9	AKKA Technologies S.A	I	France	17	15 515	13 252	1334.4	Maurice Ricci
9	8	SWECO AB (6 acquisitions in 2018) *	MD	Sweden	17	14 849	14 832	1796.7	Åsa Bergman
10		Assystem Technologies (new group with R&D focus)	MD	France	17	14 000		1000.0	Olivier Aldrin
11	11	ARUP Group	MD	UK	17/18	13 841	12 806	1784.7	Gregory Hodkinson (chairman)
12	18	Egis Group	MD	France	17	13 600	8 300	1050.0	Nicholas Jachiet
13	10	Bertrandt AG	I	Germany	16/17	12 970	12 912	992.3	Dietmar Bichler
14	12	Rambøll Gruppen A/S	MD	Denmark	17	12 590	12 497	1451.3	Jens-Peter Saul
15	14	SNC-Lavalin Europe (acquired Atkins) *	MD	UK	17	11 900	11 500	1300.0	
16	16	Segula Technologies Engineering Group *	I	France	17	11 000	10 000		Franck Ghrenassia
17	15	Fugro N.V	CE	Netherlands	17	10 044	10 530	1497.4	Mark R. F Heine
18	20	Formel D GmbH *	I	Germany	17	10 000	7 000	300.0	Jürgen Haakmann
19	17	ÅF (8 acquisitions in 2018) *	I,E,M,Enr	Sweden	17	9 646	8 672	1355.0	Jonas Wiström
20	19	EDAG Group	I	Germany	17	8 404	8 270	716.7	Cosimo de Carlo
21	21	SII S.A	I	France	17/18	7 566	6 775	560.9	P. Demay, E. Matteucci, J-P. Chevée
22	23	COWI Group	MD	Denmark	17	7 104	6 475	883.0	Lars-Peter Søbye
23	22	IAV Group	I	Germany	16	6 700	6 700	734.0	Kurt Blumenröder
24	26	SYSTRA Group *	MD	France	17	6 200	5 705	600.0	Pierre Verzat
25	25	Royal HaskoningDHV	MD	Netherlands	17	5 830	5 902	584.9	Erik Oostwegel
26	56	Mace Group (consultancy)	PM	UK	17	5 726	1 987	2249.6	Mark Reynolds
27	24	M+W Group GmbH *	CE/PM	Germany	17	5 569	6 144	2574.7	Wolfgang Büchele
28	28	RPS Group Plc	Env	UK	17	5 340	5 099	719.5	John Matheson Douglas
29	31	Turner & Townsend Group	PM,QS	UK	17/18	5 209	4 674	626.4	Vincent Clancy
30	29	Artelia Group	PM	France	17	4 900	4 900	485.0	Benoît Clocheret
31	13	Assystem Group S.A	MD	France	17	4 832	12 422	395.2	Dominique Louis
32	30	Kiwa Group (Inspecta)	CT	Netherlands	17	4 762	4 694	529.0	Paul Hesselink
33	27	Pöyry Group	MD	Finland	17	4 551	5 387	522.9	Martin À Porta
34	35	AYESA	MD	Spain	17	4 519	4 065	270.0	José Luis Manzananares Japón
35	32	Tractebel Engineering	MD	Belgium	17	4 500	4 400	605.0	Olivier Biancarelli
36	36	Ansaldo STS		Italy	17	4 228	3 951	1361.0	Andrew Barr
37	33	TPF Group	MD	Belgium	17	4 200	4 200	237.2	Thomas Spitaels
38	34	Sogeti High Tech *	I	France	17	4 145	4 145		Walter Cappilati
39		Costain Group (Europe)	I	UK	17	4 008		1921.3	Andrew Wyllie
40	95	Hiq Consulting (Agap2)	I	France	17	4 000	863	300.0	Franck Deschodt
41	37	RINA Group (D'Appolonia)	CT/I	Italy	17	3 700	3 738	437.0	Ugo Salerno
42		Stantec Europe *		UK	17	3 500		575.0	
43	44	Sigma Group	I	Sweden	17	3 317	2 785	364.5	Dan Olofsson
44	39	Norconsult AS	MD	Norway	17	3 300	3 250	503.5	Per Kristian Jacobsen
45	55	Drees & Sommer-Gruppe *	PM	Germany	17	3 200	2 000	380.1	Hans Sommer (chairman)
46	40	Tebodin, Consultants & Engineers *	MD	Netherlands	17	3 200	3 196		Niels van Rhenen
47	41	Antea Group	MD	Netherlands	17	3 160	3 057	404.0	Rob van Dongen
48	42	Capita Real Estate and Infrastructure *	MD	UK	17	3 018	3 018	211.5	Dave Spencer
49	45	Ricardo Plc	I	UK	17/18	2 852	2 728	433.5	Dave Shemmans
50	50	Multiconsult	MD	Norway	17	2 851	2 344	362.0	Christian Nørgaard Madsen
51	48	Etteplan Oy	I	Finland	17	2 802	2 407	215.8	Juha Näkki
52	54	SETEC Group (Setec TPI)	MD	France	17	2 600	2 100	277.0	Michel Kahan
53	49	Ineco, Ingeniería y Economía del Transporte SA *	CE	Spain	17	2 531	2 401	229.6	Jesús Silva

2018	2017	Group	Services	Country	Annual report	Average number of employees	(Previous year)	Turnover MEUR	CEO/Managing director
54	52	PM Group (Project Management Group) *	PM, MD	Ireland	17	2 500	2 200		David Murphy
55	43	IDOM Group	MD	Spain	17	2 499	2 980	324.1	Luis Rodriguez
56	46	TYPSA Group	MD	Spain	17	2 450	2 454	216.0	Pablo Bueno Tomás
57	51	Iberdrola Ingenieria Y Construccion *	CE,Env,PM	Spain	17	2 300	2 300	128.8	Fernando Bocharán Merino
58	47	Sener Group	MD	Spain	17	2 256	2 411	766.8	Jorge Sendagorta Gomendlo
59	53	NIRAS-Gruppen A/S	MD	Denmark	17	2 206	2 152	292.3	Carsten Toft Boesen
60	63	Tyréns AB	CE,PM	Sweden	17	2 142	1 785	229.6	Johan Dozzi
61	62	RLE International Gruppe GmbH *	I, PM	Germany	17	2 100	1 800	175.0	Ralf Laufenberg
62	57	Semcon AB (acquired HAAS Publikationen) *	I	Sweden	17	2 032	1 956	192.0	Markus Granlund
63	58	ILF Consulting Engineers	MD	Germany/Austria		2 000	1 943		Klaus Lässer
64	91	Dorsch Gruppe *	MD	Germany	17	2 000	913		Olaf Hoffmann
65	59	Rejlerkoncernen AB	E,I,CE	Sweden	17	1 952	1 939	260.1	Viktor Svensson
66	60	Gleeds *	PM	UK	17	1 800	1 910		Richard Steer
67	70	Combitech AB (acquired Tikab) *	I	Sweden	17	1 730	1 502	225.6	Hans Torin
68	64	Buro Happold	MD	UK	16/17	1 719	1 719	196.2	Roger Nickells
69	68	WYG Plc	MD	UK	17/18	1 641	1 568	174.4	Douglas McCormick
70	73	Yuksel Proje Uluslararasi AS *	CE	Turkey	17	1 481	1 400		Celal Akin (chairman)
71	69	Fichtner Group	Enr, MD	Germany	17	1 479	1 538	246.0	Georg Fichtner
72	75	HIQ International AB	I	Sweden	17	1 449	1 361	185.6	Lars Stugemo
73	76	Sogeclair SA	I	France	17	1 445	1 338	147.3	Phillippe Robardey
74	71	Foster & Partners Ltd	A	UK	17/18	1 425	1 284	279.3	Norman Foster, Matthew Streets
75	72	AEDAS Architects Group *	A	UK	17/18	1 400	1 400		Keith Griffiths
76	74	Obermeyer Planen+Beraten GmbH *	MD	Germany	17	1 400	1 400		Karsten Derks, Matthias Braun, Steffen Kretz
77	81	Italconsult S.p.A *	PM	Italy	17	1 350	1 200	115.0	Antonio Bevilacqua
78	77	Proger SpA *	MD	Italy	17	1 300	1 300		Umberto Sgambati
79	78	EMAY International Engineering & Consultancy *	CE,A	Turkey	17	1 300	1 300		Mehmet Kaba
80	132	Sitowise Oy (fmr Sito & Wise Group)	CE, Env, PM	Finland	17	1 253	525	112.5	Markus Väyrynen
81	82	Sweett Group/Currie & Brown	PM	UK	16/17	1 239	1 176	116.4	Douglas McCormick
82	80	Waterman Group plc (CTI Engineering, Japan)	MD	UK	16/17	1 223	1 223	100.1	Nick Taylor
83	84	SLR Group (SLR Management)	Env	UK	16/17	1 184	1 138	147.9	Neil Penhall
84	83	Safege Consulting Engineers	Env,S,CE	France	17	1 150	1 150	110.4	Annelise Avril
85	86	MCA Groupe *	I	France	17	1 150	1 100	85.0	Pierre Ebenstein
86	89	Asplan Viak group	MD	Norway	17	1 143	984	125.5	Øyvind Mork
87	146	Citec Group	I, Env	Finland	17	1 142	445	95.0	Johan Westermarck
88	85	Movares Group BV	CE,E	Netherlands	17	1 140	1 100	114.4	Frits Immers
89	67	RSK Group	Env	UK	16/17	1 131	1 047	13.6	Alan Ryder
90	87	Tauw Group bv	MD	Netherlands	17	1 101	1 037	117.9	Annemieke Nijhof
91	97	Projektengagemang (4 acquisitions in Sweden, in 2018) *	PM	Sweden	17	1 064	843	130.1	Ped Hedebäck
92	93	FERCHAU Aviation *	I	Germany	17	1 000	900	79.0	Harald Felten
93	144	Worley Parsons (Europe)	I	UK	17	1 000	460	1426.1	Alan Gordon
94	88	Gruner Ltd. (Gruner-Gruppe AG)	MD	Switzerland	17	998	1 019		Flavio Casanova
95	96	Ekium Group *	MD	France	17	980	850	98.0	Philippe Lanoir
96	94	AREP Group	MD	France	17	977	900	112.8	Thierry Chantriaux
97	61	EPTISA	MD	Spain	17	968	1 051	101.3	Luis Villarroya Alonso
98	90	Witteveen+Bos Consulting Engineers	MD	Netherlands	17	957	952	130.8	Sluis Leeuw, van der Biezen
99	92	BDP Building Design Partnership	A	UK	17	954	903	100.1	John McManus
100	98	Amstein + Walthert AG *	E,M	Switzerland	17	900	820		Christian Appert
101	99	Neste Engineering Solutions	I	Finland	17	886	802	170.7	Heikki Pikkarainen
102	101	Elomatic Group Oy	I,MD	Finland	17	869	777	64.5	Patrik Rautaheimo
103	118	Broadway Malyan Ltd *	A	UK	17	821	612	76.4	Gary Whittle

PM = Project Management, A = Architecture, CE = Civil-/S = Structural Engineering, CT = Certification and testing, Env = Environment, Enr = Energy, E = Electrical, M = Mechanical/HEVAC, I = Industrial, MD = Multi Disciplinary – (*) = lack of conforming figure/proforma/assumed

THE EUROPEAN TOP 200 CONSULTING ENGINEERING AND ARCHITECTURAL GROUPS

2018	2017	Group	Services	Country	Annual report	Average number of employees	(Previous year)	Turnover MEUR	CEO/Managing director
104	103	Golder Associates Europe *	Env,CE, PM,Enr	UK	17	816	751	108.4	Anna-Lena Öberg-Högsta
105	112	Granlund group	E,M	Finland	17	808	666	71.2	Pekka Metsi
106	100	Hoare Lea & Partners *	E,M,Enr	UK	17	793	800	90.2	Brian Clargo (Partner) et al
107	108	Cundall Johnston & Partners LLP	CE,S,Env	UK	17	746	695		David Dryden
108	111	FCG Finnish Consulting Group	MD	Finland	17	743	673	62.6	Ari Kolehmainen
109	123	Gauff Gruppe *	MD	Germany	17	730	600	72.0	Gerhard H. Gauff
110	113	ATP Architects Engineers	A,CE,E,M	Austria	17	700	650	75.8	Christoph M. Achammer
111	135	ABMI-groupe S.A *	I	France	17	700	500	50.0	Philippe Chatron
112	106	Peter Brett Associates (Stantec) *	MD	UK	17	700	700		Paul Reilly
113	107	GOPA-Consultants Group *	PM,I,Env	Germany	17	700	700		Berthold Averweg
114	117	CSD Group	Env, PM, CE,S, E	Switzerland	17	700	624		Jean-Pascal Gendre
115	129	MOE A/S	MD	Denmark	17	693	554	78.9	Christian Listov-Saabye
116	110	GHESA Ingeniería y Tecnología	CE,Env,Enr	Spain	17	682	682	78.7	Javier Perea
117	109	White Architects	A,PM, Env	Sweden	17	680	682	95.4	Alexandra Hagen
118	119	Tengbom grouo (acquired Werket arkitekter)	A	Sweden	17	680	603	73.3	Johanna Frelin
119	116	INROS LACKNER	MD	Germany	17	662	628	52.8	Uwe Lemcke
120	104	ÚJV Řez, a. s.	Enr,I	Czech Republ.	17	643	750	61.9	Karel Křížek
121	102	IV-Groep b.v.	MD	Netherlands	17	642	761	81.4	Rob van de Waal
122	114	Emch + Berger Gruppe *	MD	Switzerland	17	640	630		Martin Scherer
123	152	A-Insinöörit Group	S, CE, PM	Finland	17	636	427	59.4	Jyrki Keinänen
124	115	BG Bonnard & Gardel Groupe SA (BG Consulting Engineers)	MD	Switzerland	17	633	628		Pierre Epars
125	133	CDM Smith Europe GmbH *	CE, Env	Germany	17	620	513	65.0	Andreas Roth
126	120	Vössing Ingenieure	MD	Germany	17	611	601	53.7	Rudolf Vienenkötter, Heiko Borchardt
127	126	HPC AG	Env,PM,CE	Germany	17	607	574	62.0	Josef Klein-Reesink, Andreas Kopton
128	136	Gmp Architekten von Gerkan, Marg und Partner *	A	Germany	17	606	585		Meinhard von Gerkan,Volkwin Marg
129	122	AIA Life Designers*	CE,A	France	16	600	600		Christian Bougeard
130	124	Basler & Hofmann AG *	MD	Switzerland	17	600	600		Dominik Courtin, Jürg Büchler
131	141	Ridge And Partners Llp	CE,A	UK	17	600	469		Adrian O'Hickey
132	154	Acciona Ingenieria Sa *	I	Spain	17	600	425		Pedro Martínez
133	125	Orbicon A/S	MD	Denmark	17	592	579	66.0	Per Christensen
134	149	Grimshaw Architects Llp	A	UK	17/18	539	435	80.9	Jolyon Brewis
135	140	JBA Group Limited	CE, Env	UK	16/17	534	469	36.3	
136	131	Krebs und Kiefer Beratende Ingenieure	CE,S, PM	Germany	16	532	532	47.6	Jan Akkermann
137	130	Pell Frischmann Group	MD	UK	17	531	538	37.1	Sudho Prabhu
138	128	PCG-Profabril Consulplano Group	MD	Portugal	17	527	554	45.5	Ilidio de Ayala Serôdio
139	121	Prointec S.A	MD	Spain	17	508	518	35.1	Jordi Dagá Sancho
140	134	Knightec AB	I	Sweden	16/17	503	474	50.4	Dimitris Gioulekas
141	127	Deerns Groep BV	E, M, PM, I	Netherlands	17	500	554	50.0	Jan Karel Mak
142	137	Fairhurst *	MD	Scotland	17	500	500		Robert McCracken
143	223	EBP Ernst Basler & Partner Ltd *	MD	Switzerland	17	500	239		Daniel Schläpfer
144	143	Benoy Limited (Architects)	A	UK	17	489	461	56.7	Tom Cartledge
145	138	Wardell Armstrong LLP *	MD	UK	18	480	480		Keith Mitchell
146	150	Structor group	CE,PM	Sweden	17	450	433	75.5	Fladvad, Hulthén, Texte
147	139	Clafis Engineering *	I	Netherlands	28	450	480		Lambert Jonker
148	148	Rapp Gruppe *	MD	Switzerland	17	450	440		Bernhard Berger
149	159	Steer Davies Gleave Ltd	CE	UK	17/18	437	400	56.6	Hugh Jones
150	151	Assmann Beraten + Planen GmbH *	MD	Germany	17	429	429	31.5	Peter Warnecke, Martin Fecke
151	145	Pick Everard Ltd *	MD	UK	17	425	450	61.6	Duncan Green
152	163	HPP Hentrich-Petschnigg & Partner (HPP Architects)	A	Germany	17	420	377	39.3	Joachim H. Faust, Gerhard G. Feldmeyer
153	155	Bengt Dahlgren AB	M,Enr	Sweden	17	419	414	55.3	no CEO
154	158	Hill International Europe *	CE,PM	UK	17	400	400	43.9	

2018	2017	Group	Services	Country	Annual report	Average number of employees	(Previous year)	Turnover MEUR	CEO/Managing director
155	79	Müller-BBM Holding GmbH *	MD	Germany	17	400			Bittner, Grotz, Hantschk, Ropertz, Schierer & Schröder
156	156	Amberg Group *	CE,S,PM	Switzerland	17	400	400		Felix Amberg
157	183	Aveco de Bondt BV *	CE	Netherlands	17	400	310		Gerald Paalman
158	160	Herzog & de Meuron Architekten AG *	A	Switzerland	17	400	380		Pierre de Meuron, Jacques Herzog
159	165	Holinger Group	CE	Switzerland	17	396	373		Peter Rudin
160	170	Curtins Group	CE,PM	UK	17	389	351		Rob Melling
161	168	Insta Automation Oy	I	Finland	17	387	358	58.3	Timo Lehtinen
162	147	PBR Planungsbüro Rohling AG *	MD	Germany	17	385	440	39.5	Heinrich Eustrup
163	178	BAC Engineering Consultancy Group	MD	Spain	17	370	325	22.5	Joan Franco Poblet
164	176	Bjerking AB	CE,M	Sweden	17	367	332	49.2	Anders Wärefors
165	161	Burckhardt+Partner AG *	A	Switzerland	17	360	380		Philipp Bruhlmeier
166	169	ABT Holding BV	MD	Netherlands	16	357	357	42.8	Gerard Doos, Rudi Roijakkers
167	164	Sheppard Robson *	A	UK	16/17	352	374	22.0	Andrew German
168	171	Chapman Taylor LLP	A	UK	16/17	350	350	40.9	Chris Lanksbury
169	175	HENN Architekten *	A	Germany	17	350	341	35.9	Gunter Henn (CEO), Martin Henn, Stefan Sinning, Frank Hoffmeister
170	182	Lievense (fmr Bartels Engineering) *	CE,S,PM	Netherlands	17	350	311		Taco Klevering, Pieter van Boom
171	206	HaCon *	I,CE	Germany	17	350	270		Michael Frankenberg
172	234	RKW Architektur + *	A	Germany	17	350	220		Wojtek Grabianowski
173	162	Zaha Hadid Architects	A	UK	16/17	345	379	52.8	Zaha Hadid, Patrik Schumacher
174	203	Planungsgruppe M+M AG , PGMM *	E,M,PM, Enr	Germany	17	345	275	36.0	Hermann Ott
175	186	Efla hf	MD	Iceland	17	339	303	55.5	Guðmundur Þorbjörnsson
176	177	Barton Willmore Group	A,PM	UK	16/17	336	329		Stephen Toole
177	184	INBO Architects/Consultants *	A,PM	Netherlands	17	330	308		Aaron Bogers
178	167	Verkís hf	MD	Iceland	17	322	364	48.0	Sveinn Ingi Ólafsson
179	179	Stride Treglown Group PLC	A	UK	17	319	321	25.2	David Hunter
180	198	IPROconsult GmbH *	CE, Env, A	Germany	2017	319	282		Lutz Junge
181	205	Pascall+Watson	A	UK	17	317	271	44.5	Steve West
182	195	SALFO & Associates SA		Greece	17	313	292	22.9	Ioannis Foteinos
183	180	Hifab Group (acquired Byggkultur Mittkonsult) *	PM	Sweden	17	312	320	46.3	Patrik Schelin
184	200	Heinle, Wischer und Partner	A,PM	Germany	17	310	280	36.2	T. Behnke, H. Chef-Hendriks, A. Gyalokay, T. Heinle, M. Kill, J. Krauße, C. Pelzeter, E.Schultz
185	181	GPO Group (GPO Ingenieria, S.A.)	MD	Spain	17	303	320	20.0	Xavier Montobbio
186	187	Purcell Architects *	A	UK	16	302	302	24.3	Mark Goldspink
187	190	Allies & Morrison Architects Ltd *	A	UK	17	300	300		Bob Allies
188	193	O.M.A. Office for Metropolitan Architecture *	A	Netherlands	17	300	295		Rem Koolhaas
189	185	Vahanen Group Oy	CE	Finland	17	296	306	28.6	Risto Räty
190	197	Mannvit hf.	MD	Iceland	17	292	282	47.9	Sigurður Sigurjónsson
191	194	PRP Architects Ltd *	A	UK	17	292	292		Neil Griffiths
192	202	Henning Larsen Architects	A	Denmark	17/18	288	275	37.6	Mette Kynne Frandsen
193	192	C.F.Møller Architects	A	Denmark	17	286	297	40.9	Klaus Toustrup
194	238	Protacon group	I,E,PM	Finland	17	286	219	31.0	Timo Akselin
195	166	DOLSAR Engineering Inc. Co.	PM, CE, Env,E,M,MD	Turkey	17	286	371	14.4	H. Îrfan Aker
196	250	Eurocon Consulting (acquired KLT Konsult) *	I	Sweden	17	285	204	28.8	Peter Johansson
197	199	Steinbacher-Consult GmbH *	CE, PM	Germany	17	280	280		Stefan Steinbacher
198	201	IUB Engineering AG *	CE,PM	Switzerland	17	280	280		Urs Müller
199	216	Iproplan Planungsges. Mbh *	MD	Germany	17	280	250		Jörg Thiele
200		O'Connor Sutton Cronin	MD	Ireland	17	280			Tony Horan

PM = Project Management, A = Architecture, CE = Civil-/S = Structural Engineering, CT = Certification and testing, Env = Environment, Enr = Energy, E = Electrical, M = Mechanical/HEVAC, I = Industrial, MD = Multi Disciplinary – (*) = lack of conforming figure/proforma/assumed

OUR MEMBERS CREATE A BETTER SOCIETY

– INNOVATIVE DESIGN FOR SMART SOCIETIES

The Swedish Federation of Consulting Engineers and Architects, STD-företagen, works in the best interests of the member firms with the aim of strengthening their competitiveness and long-term profitability. With 765 member firms, and a collective work force of some 37,000 employees, STD-företagen represents about two thirds of the industry in Sweden.

STD-företagen strives to promote high quality, sound development, a high level of profitability and modern working conditions within the member companies.

STD-företagen is a part of Almega, which is the organisation that represents service companies in Sweden. Almega is the largest federation in Svenskt Näringsliv (Confederation of Swedish Enterprise).

STD-företagen is also a member of the international engineering-consulting organisations (FIDIC) as well as of the Architects' Council of Europe (ACE).

The Consulting Engineering and Architectural Groups A Swedish and International survey

IN COLLABORATION WITH

- Foreningen af Rådgivende Ingeniører, Danmark
- Rådgivende Ingeniørers Forening, Norge
- Arkitektbedriftene, Norge
- Felag rádgjafarverkfrædinga, Island
- Samtök arkitektastofa, SAMARK, Island
- Suunnittelu- ja konsultointiyritykset SKOL ry, Finland

Svenska Teknik & Designföretagen
almega

– INNOVATIVE DESIGN FOR SMART SOCIETIES

www.std.se

ARTIKELNUMMER: WS1006-1812