

moving minds



Half Year Report  
as of June 30, 2009



## To our Shareholders



Dear shareholders, ladies and gentlemen,

The worldwide economic crisis also has a firm grip on the construction industry. Just a few weeks ago, the European industry group Euroconstruct made significant downward corrections to its forecasts for the current year. According to those corrections, revenues in the European construction industry will fall by 9.9 percent in 2009. The Nemetschek Group will also be affected by these developments, as we generate the majority of our revenues in Europe.

Prospects are not quite so bad for Germany, which still makes up the group's main base, although Euroconstruct still expects Germany to experience a drop in revenues of 4 percent. According to industry representatives, the various economic packages are only being felt slowly by the building companies and this is not expected to change before the end of the summer break. As the third quarter is traditionally a period of low revenue, the Nemetschek Group does not expect to see a market upturn until the fourth quarter at the earliest.

Overall, a fall in revenues of around 10 percent for the current year still seems realistic – taking into account the current economic uncertainty. If the fall in revenues remains at the expected level, we should be able to maintain an operative margin for 2009 of around 20 percent (that is between 18 to 22 percent), just as we previously predicted. This would be an excellent result for the group in these difficult times!

### Significant cost savings

In recent months, we have been able to demonstrate that Nemetschek has its costs under control. Our subsidiaries have been affected very differently by the economic crisis and the reactions were tailored accordingly to individual cases. Nevertheless, all subsidiaries have made their contribution to the targeted savings. They have all pulled together to enable us to reduce operating expenses alone by 8 percent in the first six months of the year. This allowed the company to make up for a significant proportion of the loss in revenues and helped to stabilize the operative margin.

Our continued strong cash flow has also allowed us to continue to reduce our debt at a fast pace. In view of liquid assets of over 23 million euros, Nemetschek AG's net debt is currently only around 16 million euros. The group's equity ratio rose to 45 percent. We therefore feel suitably equipped, should the economic crisis continue for much longer.

Our subsidiaries are currently continuing to work on positioning themselves to reap the maximum benefit from a market upturn – whenever that might occur. In the meantime, all the architecture programs within the range of Nemetschek solutions provide for the design of more environmentally-friendly buildings and the energy renovation of existing buildings. These are subjects that every designer must deal with nowadays. In parallel, our development teams are already working on the software solutions for tomorrow and for the day after tomorrow. We intend to remain technology leaders in our sector well into the future.

I would like to thank all shareholders for their confidence.  
Best wishes,

Yours,

Ernst Homolka  
CEO

# The Share

## Upwards trend

Stock markets have recovered noticeably since April – including Nemetschek shares. Since reaching their lowest level for many years in March, they recovered significantly in the second quarter.

The upturn began at the end of April with the announcement of the results for the first quarter and their extremely positive reception by the market. In parallel, management was conducting numerous invest-

ment interviews. The share received its next boost in the middle of May, when analysts from Goldman Sachs raised the price target to 17 euros.

On May 22, Nemetschek shares reached a 3-month high of 12.05 euros, while average trading volume rose to around 13,000 shares per day. This was followed by low-level profit taking and the share price was 10.02 euros by the end of the quarter.

## Price development of the Nemetschek Share from January 1, 2008 onward



## Nemetschek Group at a glance

	Millions of €	June 30, 2009	June 30, 2008	Change
Revenues		65.2	73.3	-11.1 %
Operating income		67.1	74.5	-10.0 %
Gross Profit		63.4	69.9	-9.4 %
as % of revenue		97.2 %	95.4 %	
EBITDA		12.9	15.3	-15.3 %
as % of revenue		19.8 %	20.8 %	
per share in €		1.34	1.58	
EBIT		8.1	10.4	-22.4 %
as % of revenue		12.4 %	14.2 %	
per share in €		0.84	1.08	
Net income (Group shares) without PPA effects		7.5	9.6	-22.2 %
per share in €		0.77	0.99	
Net income (Group shares)		4.6	6.7	-30.7 %
per share in €		0.48	0.69	
Net income		4.7	7.0	-32.4 %
Cash flow from operating activities		13.6	16.2	-16.1 %
Cash and cash equivalents *)		23.4	23.2	0.9 %
Equity *)		72.1	67.9	6.2 %
Equity quote *)		45 %	41 %	
Average number of outstanding shares (undiluted)		9,625,000	9,625,000	0.0 %

\*) Presentation of previous year as of December 31, 2008

## On the way to world leadership together



Image ad of the Nemetschek Engineering Group

Europe's engineers are under pressure: on the one hand, they are confronted with higher quality demands, new legislation, codes and environmental requirements, while on the other there is a shortage of qualified engineers and increasing pressure on costs. As a result, there is rising demand for software solutions that increase productivity and make processes more efficient – but user demands are also higher.

In view of this, the Nemetschek Engineering Group bundled its forces in 2008. It comprises the solutions from Nemetschek Scia, Nemetschek Allplan, Frilo, Nemetschek Engineering and Glaser, which are used by around 20,000 customers across the world. Measured by sales, the group is the world's fourth-largest provider of engineering software for concrete and steel construction, after US competitors Autodesk and Bentley and the Finnish company Tekla. Together, the group offers a broad range of solutions, from structural calculation and design and detailing through to production preparation and logistics, and from easy-to-learn first-time software through to powerful high-end solutions.

### Practical solutions

The one distinguishing feature all the solutions have in common is that they are practical – true to the motto “Engineers develop software for engineers.” “No other software meets real customer requirements in such detail,” says Jean-Pierre Rammant, CEO of Scia and head of the Engineering Group.

For years, numerous customers have been using multiple solutions from the group, which paves the way for more intensive collaboration and has already led to a series of innovations. One example: “Round-Trip Engineering” permits seamless data exchange between a structural model developed in Allplan and a structural analysis model developed in Scia or Friedrich&Lochner – which makes the entire process faster and more efficient. Together, the Engineering Group addresses future topics such as the integration of 3D structural model data in all software products, the exchange of model data using standardized exchange formats and the simplification of cross-office work processes.

Another topic of the moment is the integration of Eurocodes in the software solution. With the 10 standards of these Eurocodes, common rules for the design of buildings in the European Community are being implemented for the first time, and one of the aims is to eliminate the technical barriers to trade for building products and services.

The Engineering Group also conducts joint marketing activities, for example the organization of engineering days, at which customers can find out about new solution approaches. Every two years, it also organizes an international user competition to reward particularly innovative engineering products. More than 120 engineering companies took part in this year's “User Contest” (one of the projects is presented on page 11).

### Internationalization step by step

The Nemetschek Engineering Group operates in Europe, the Middle East and individual emerging economies such as India and Brazil, and is planning further internationalization on a step-by-step basis. The basis for this is the joint setup of competence centers in selected sales organizations to ensure that the products offered by the Engineering Group are sold with the required application expertise. For example, the competence center in Brussels supports the Northern European region, while the center in Prague is responsible for Eastern Europe. Together with the American subsidiary Nemetschek North America, the sale of some of the Engineering Group's products in the United States is also set to begin this year.

The target is ambitious: Together, the Engineering Group aims to become the largest provider of engineering software for concrete and steel construction in the world.

# Report on the Earnings, Financial and Asset Situation

## EBITDA margin once again at 20 %

In the first half of 2009 the Nemetschek Group managed to keep its EBITDA margin largely stable at 19.8% (previous year: 20.8%) despite the anticipated drop in revenues. Compared to the same strong period in the previous year revenues dropped by 11.1% from 73.3 million euros to 65.2 million euros. The group EBITDA was 12.9 million euros

(previous year: 15.3 million euros). At 4.7 million euros, net income was below the previous year's level (7.0 million euros). This was affected to the tune of 0.8 million euros by the negative market valuation of the interest hedge concluded as part of the external financing of the Graphisoft acquisition. The cash flow from operating activities amounted to 13.6 million euros, after 16.2 million euros in the first half of last year.

## Consolidated statement of comprehensive income

for the period from January 1 to June 30, 2009 and January 1 to June 30, 2008

Thousands of €	2nd quarter 2009	2nd quarter 2008	6 month 2009	6 month 2008
<b>Revenues</b>	<b>31,669</b>	<b>36,919</b>	<b>65,219</b>	<b>73,348</b>
Own work capitalized	59	21	113	92
Other operating income	213	493	1,725	1,072
<b>Operating Income</b>	<b>31,941</b>	<b>37,433</b>	<b>67,057</b>	<b>74,512</b>
Cost of materials/cost of purchased services	-1,866	-2,150	-3,682	-4,572
Personnel expenses	-15,316	-15,081	-30,812	-30,543
Depreciation of property, plant and equipment and amortization of intangible assets	-2,378	-2,430	-4,820	-4,831
thereof amortization of intangible assets due to purchase price allocation	-1,762	-1,846	-3,580	-3,692
Other operating expenses	-9,113	-12,953	-19,651	-24,144
<b>Operating expenses</b>	<b>-28,673</b>	<b>-32,614</b>	<b>-58,965</b>	<b>-64,090</b>
<b>Operating results</b>	<b>3,268</b>	<b>4,819</b>	<b>8,092</b>	<b>10,422</b>
Interest income	117	854	224	1,183
Interest expenses	-318	-410	-2,041	-2,249
Income from associates	30	58	87	133
<b>Earnings before taxes</b>	<b>3,097</b>	<b>5,321</b>	<b>6,362</b>	<b>9,489</b>
Income taxes	-724	-1,420	-1,653	-2,523
<b>Net income for the year</b>	<b>2,373</b>	<b>3,901</b>	<b>4,709</b>	<b>6,966</b>
<b>Other comprehensive income:</b>				
Difference from currency translation	17	1,671	-434	710
<b>Total comprehensive income for the year</b>	<b>2,390</b>	<b>5,572</b>	<b>4,275</b>	<b>7,676</b>
<b>Net income for the year attributable to:</b>				
Equity holders of the parent	2,340	3,770	4,614	6,661
Minority interests	33	131	95	305
<b>Net income for the year</b>	<b>2,373</b>	<b>3,901</b>	<b>4,709</b>	<b>6,966</b>
<b>Total comprehensive income for the year attributable to:</b>				
Equity holders of the parent	2,357	5,441	4,180	7,371
Minority interests	33	131	95	305
<b>Total comprehensive income for the year</b>	<b>2,390</b>	<b>5,572</b>	<b>4,275</b>	<b>7,676</b>
Earnings per share (undiluted) in euros	0.24	0.39	0.48	0.69
Earnings per share (diluted) in euros	0.24	0.39	0.48	0.69
Average number of shares outstanding (undiluted)	9,625,000	9,625,000	9,625,000	9,625,000
Average number of shares outstanding (diluted)	9,625,000	9,625,000	9,625,000	9,625,000

**Stable revenues from maintenance contracts**

The reason for the decrease in revenues was the drop in license sales. These fell in the first half by 20.9% from 37.5 million euros to 29.6 million euros. At 30.6 million euros the revenues from maintenance contracts were stable at the previous year's level.

**Revenues in Germany at last year's level**

In Germany the Nemetschek Group achieved revenues of 27.5 million euros (previous year: 27.4 million euros). The revenue development abroad was negative and amounted to 37.8 million euros (previous year: 45.9 million euros). The international proportion of revenues was thus 58 % of overall revenues.

**All segments profitable**

The companies in the Design segment achieved revenues of 53.1 million euros (previous year: 60.8 million euros). The EBITDA margin was 17.8 % (previous year: 20.2 %). The companies in the Build and Manage segments recorded a slight growth compared with the previous year. Revenues in the Build segment rose by 3.5 % to 6.7 million euros. The EBITDA margin was 36.9 % (previous year: 27.9 %). In the Manage segment revenues rose by 2.3 % to 2.0 million euros, with an EBITDA margin of 14.6 % (previous year: – 5.8 %). The Multimedia segment achieved revenues of 3.5 million euros (previous year: 4.1 million euros). The EBITDA amounted to 0.7 million euros (previous year: 1.3 million euros).

**Consolidated statement of financial position**

as of June 30, 2009 and as of December 31, 2008

Assets	Thousands of €	June 30, 2009	December 31, 2008
<b>Current assets</b>			
Cash and cash equivalents		23,444	23,227
Trade receivables, net		18,355	20,314
Inventories		868	651
Tax refunded claims for income taxes		2,827	2,840
Current financial assets		500	139
Other current assets		4,823	4,815
<b>Current assets, total</b>		<b>50,817</b>	<b>51,986</b>
<b>Non-current assets</b>			
Property, plant and equipment		3,997	4,327
Intangible assets		51,062	54,599
Goodwill		52,037	52,079
Associates/investments		511	659
Deferred tax assets		1,757	2,043
Non-current financial assets		899	1,010
Other non-current assets		763	706
<b>Non-current assets, total</b>		<b>111,026</b>	<b>115,423</b>
<b>Total assets</b>		<b>161,843</b>	<b>167,409</b>

### Costs significantly reduced

Thanks to strict cost management measures Nemetschek achieved an EBITDA of 12.9 million euros despite the drop in revenues in the first half (previous year: 15.3 million euros). Operating expenses sank by a total of 8.0%. Further measures taken in the first half of the year will have a positive impact on earnings by the end of the business year. The group reduced other operating expenses by 18.6% from 24.1 million euros to 19.7 million euros. This is due to several individual measures throughout all of the group companies, including savings in advertising, sales expenditures and external personnel costs. Following amortization from purchase price allocation of 3.6 million euros and interest of 2.0 million euros from the bank loans, the net income was 4.7 million euros (previous year: 7.0 million euros). The interest charg-

es include the negative market valuation of the interest hedge of 0.8 million euros. The earnings per share (consolidated shares, basic) are 0.48 euros, compared to 0.69 euros in the previous year.

### Cash flow from operating activities at 13.6 million euros

In the first half of 2009 the Nemetschek Group achieved a cash flow of 13.6 million euros (previous year: 16.2 million euros). The cash flow for the period reached 11.7 million euros (previous year: 14.1 million euros). This is mainly attributable to the drop of 3.1 million euros in earnings before taxes. The cash flow from investment activities amounted to – 2.3 million euros (previous year: –2.5 million euros). Besides investments in the replacement of fixed assets, this also in-

Equity and liabilities	Thousands of €	June 30, 2009	December 31, 2008
<b>Current liabilities</b>			
Short-term loans and current portion of long-term loans		7,943	8,077
Trade payables		4,506	6,640
Payments on account		115	151
Provisions and accrued liabilities		9,039	11,547
Deferred revenue		18,432	12,133
Income tax liabilities		1,892	1,524
Other current liabilities		4,394	6,225
<b>Current liabilities, total</b>		<b>46,321</b>	<b>46,297</b>
<b>Non-current liabilities</b>			
Long-term loans without current portion		31,824	41,324
Deferred tax liabilities		7,339	8,432
Pension provisions		540	513
Non-current financial obligations		3,130	2,326
Other non-current liabilities		577	613
<b>Non-current liabilities, total</b>		<b>43,410</b>	<b>53,208</b>
<b>Equity</b>			
Subscribed capital		9,625	9,625
Capital reserve		41,611	41,611
Revenue reserve		52	52
Currency translation		–3,476	–3,042
Retained earnings		23,027	18,413
<b>Equity (Group shares)</b>		<b>70,839</b>	<b>66,659</b>
Minority interests		1,273	1,245
<b>Equity, total</b>		<b>72,112</b>	<b>67,904</b>
<b>Total equity and liabilities</b>		<b>161,843</b>	<b>167,409</b>

## Consolidated cash flow statement

for the period from January 1 to June 30, 2009 and January 1 to June 30, 2008

Thousands of €	2009	2008
Profit (before tax)	6,362	9,489
Depreciation and amortization of fixed assets	4,820	4,831
Change in pension provision	27	25
Non-cash transactions	557	-182
Income from associates	-87	-133
Losses from disposals of fixed assets	7	118
<b>Cash flow for the period</b>	<b>11,686</b>	<b>14,148</b>
Interest income	-224	-1,183
Interest expenses	2,041	2,249
Change in other provisions and accrued liabilities	-2,508	-1,985
Change in trade receivables	2,206	4,681
Change in other assets	1,093	-928
Change in trade payables	-2,134	-1,406
Change in other liabilities	2,469	890
Cash received from distributions of associates	235	284
Interest received	184	689
Income taxes received	387	95
Income taxes paid	-1,859	-1,345
<b>Cash flow from operating activities</b>	<b>13,576</b>	<b>16,189</b>
Capital expenditure	-1,055	-2,580
Changes in liabilities from acquisitions	-1,299	10
Cash received from the disposal of fixed assets	71	112
<b>Cash flow from investing activities</b>	<b>-2,283</b>	<b>-2,458</b>
Dividend payments	0	-6,256
Minority interests paid	-67	-703
Repayments of borrowings	-9,634	-12,771
Interest paid	-1,208	-2,223
<b>Cash flow from financing activities</b>	<b>-10,909</b>	<b>-21,953</b>
<b>Changes in cash and cash equivalents</b>	<b>384</b>	<b>-8,222</b>
<b>Effect of exchange rate differences on cash and cash equivalents</b>	<b>-167</b>	<b>-9</b>
<b>Cash and cash equivalents at the beginning of the period</b>	<b>23,227</b>	<b>29,121</b>
<b>Cash and cash equivalents at the end of the period</b>	<b>23,444</b>	<b>20,890</b>

Consolidated segment reporting from January 1 to June 30, 2009 and January 1 to June 30, 2008

2009	Thousands of €	Total	Elimination	Design	Build	Manage	Multimedia
Revenue, external		65,219	0	53,060	6,702	1,979	3,478
Intersegment revenue		0	-277	0	5	11	261
<b>Total revenue</b>		<b>65,219</b>	<b>-277</b>	<b>53,060</b>	<b>6,707</b>	<b>1,990</b>	<b>3,739</b>
<b>EBITDA</b>		<b>12,912</b>		<b>9,419</b>	<b>2,476</b>	<b>289</b>	<b>728</b>
Depreciation/amortization		-4,820		-4,631	-68	-28	-93
<b>EBIT (Segment operating result)</b>		<b>8,092</b>		<b>4,788</b>	<b>2,408</b>	<b>261</b>	<b>635</b>

2008	Thousands of €	Total	Elimination	Design	Build	Manage	Multimedia
Revenue, external		73,348	0	60,849	6,473	1,935	4,091
Intersegment revenue		0	-301	0	17	0	284
<b>Total revenue</b>		<b>73,348</b>	<b>-301</b>	<b>60,849</b>	<b>6,490</b>	<b>1,935</b>	<b>4,375</b>
<b>EBITDA</b>		<b>15,253</b>		<b>12,274</b>	<b>1,803</b>	<b>-113</b>	<b>1,289</b>
Depreciation/amortization		-4,831		-4,651	-73	-26	-81
<b>EBIT (Segment operating result)</b>		<b>10,422</b>		<b>7,623</b>	<b>1,730</b>	<b>-139</b>	<b>1,208</b>

## Statement of changes in group equity

for the period from January 1 to June 30, 2009 and January 1 to June 30, 2008

	Equity attributable to the parent company's shareholders						Total	Minority interests	Total equity
	Thousands of €	Subscribed capital	Capital reserve	Revenue reserve	Currency translation	Retained earnings			
<b>As of January 1, 2008</b>		<b>9,625</b>	<b>41,646</b>	<b>52</b>	<b>-4,169</b>	<b>14,395</b>	<b>61,549</b>	<b>1,337</b>	<b>62,886</b>
Difference from currency translation					710		710		710
Net income of the year						6,661	6,661	305	6,966
<b>Total comprehensive income for the year</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>710</b>	<b>6,661</b>	<b>7,371</b>	<b>305</b>	<b>7,676</b>
Share-based payments			-181				-181		-181
Dividend payments minorities						-34	-34	-669	-703
Dividend payment						-6,256	-6,256		-6,256
<b>As of June 30, 2008</b>		<b>9,625</b>	<b>41,465</b>	<b>52</b>	<b>-3,459</b>	<b>14,766</b>	<b>62,449</b>	<b>973</b>	<b>63,422</b>
<b>As of January 1, 2009</b>		<b>9,625</b>	<b>41,611</b>	<b>52</b>	<b>-3,042</b>	<b>18,413</b>	<b>66,659</b>	<b>1,245</b>	<b>67,904</b>
Difference from currency translation					-434		-434		-434
Net income of the year						4,614	4,614	95	4,709
<b>Total comprehensive income for the year</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>-434</b>	<b>4,614</b>	<b>4,180</b>	<b>95</b>	<b>4,275</b>
Dividend payments minorities							0	-67	-67
<b>As of June 30, 2009</b>		<b>9,625</b>	<b>41,611</b>	<b>52</b>	<b>-3,476</b>	<b>23,027</b>	<b>70,839</b>	<b>1,273</b>	<b>72,112</b>

cludes final payments for the variable purchase price liability already reported in the balance sheet for the acquisition of the Scia Group as well as Nemetschek Bausoftware GmbH. The cash flow from financing activities amounted to – 10.9 million euros (previous year: – 22.0 million euros). The Nemetschek Group had repaid further 9.6 million euros from loans by June 30, 2009. The previous year's value essentially included repayments amounting to 12.8 million euros as well as dividend payments of 7.0 million euros.

#### Equity ratio at 45 %

Compared to December 31, 2008, the liquid assets increased by 0.2 million euros to 23.4 million euros. As a result, the Group's net debt is 16.3 million euros (December 31, 2008: 26.1 million euros). Further repayments are planned in the second half of the year, consisting of scheduled (3.5 million euros) and unscheduled repayments (up to a maximum of 4.9 million euros depending on the business development). The current assets decreased by 1.2 million euros to 50.8 million euros. The long-term assets were reduced to 111.0 million euros (December 31, 2008: 115.4 million euros). This was primarily the result of planned amortization on asset values from purchase price allocation. 7.9 million euros of the current liabilities relate to the current portion of the bank loan from the Graphisoft acquisition. 31.8 million euros of the non-current liabilities relate to the long-term portion of the bank loan. The equity ratio is 45 % (December 31, 2008: 41 %). Equity amounts to 72.1 million euros (December 31, 2008: 67.9 million euros).

#### Events after the end of the reporting period

There were no significant events after the end of the reporting period.

#### Employees

On June 30, 2009, the Nemetschek Group employed 1,073 people (December 31, 2008: 1,114).

#### Shares owned by the board members

As of June 30, 2009 there is no change in the share ownership of the board members: Professor Georg Nemetschek (supervisory board) owns 1,411,322 shares; Ernst Homolka (managing board) owns 225 shares.

#### Report on significant transactions with associated companies and individuals

There are no significant changes compared with the information provided in the consolidated financial statements as per December 31, 2008.

#### Opportunity and risk report

Please see the consolidated financial report of December 31, 2008 for details on the most significant opportunities and risks for the prospective development of the Group in 2009. There have been no major changes in the meantime.

#### Report on forecasts and other statements on prospective development

The end of the worldwide economic crisis is not yet foreseeable and it has also left its mark on the building industry. According to the forecasts updated in June 2009, Euroconstruct, the industry group, expects revenues in the European building industry to drop by 9.9 percent. According to the same forecast, growth in the market is not to be expected in 2010 either. Euroconstruct expects revenues in Germany to drop by 4 percent in 2009; according to industry representatives, the various economic packages are only being felt slowly by the building companies. A revival of the market can be expected in the fourth quarter at the earliest. Nemetschek, however, currently still assumes that, with an expected drop in revenues of around 10 percent in fiscal 2009, it will be able to keep the group's operative margin (EBITDA margin) at around 20 percent.

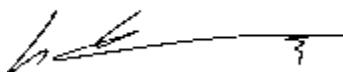
### Notes on the half-year report based on IFRS

The Nemetschek Group's half-year report is compiled in accordance with the International Accounting Standards Board's (IASB) International Financial Reporting Standards. In contrast to December 31, 2008 the consolidated earning statement was drawn up in accordance with IAS 1 (revised 2007) based on the "one statement approach" as of March 31, 2009. The interim consolidated statement on June 30, 2009 has not been audited and has not undergone an audit review. It is based on the same accounting, appraisal and calculation methods as the consolidated statement dated December 31, 2008. The group of companies corresponds to the situation on December 31, 2008.

### Declaration of the legal representatives

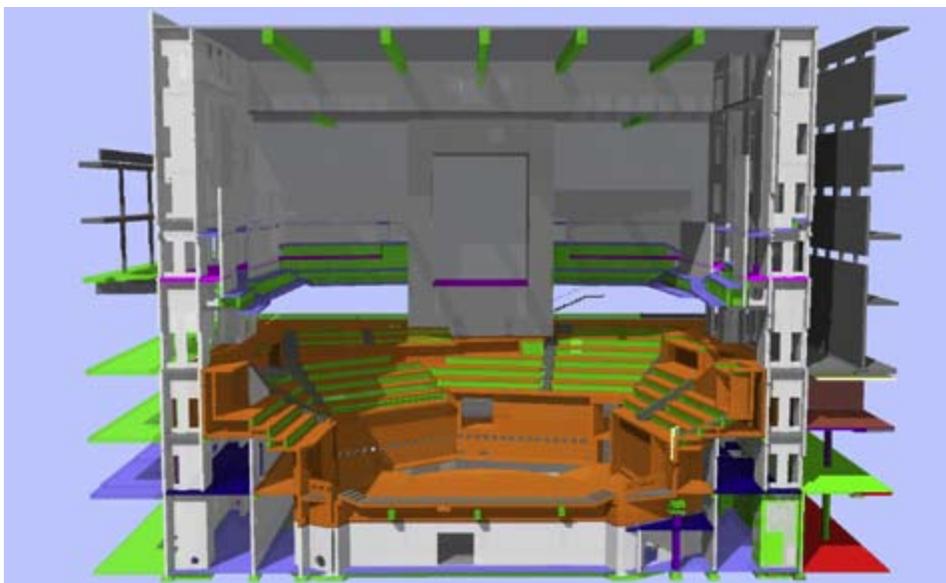
"I confirm, to the best of my knowledge, and in accordance with the applicable reporting principles for interim financial reporting, the interim consolidated financial statements give a true and fair view of the assets, liabilities, financial position and profit or loss of the group, and the interim management report of the group includes a fair review of the development and performance of the business and the position of the group, together with a description of the principal opportunities and risks associated with the expected development of the group for the remaining months of the financial year."

Munich, August 2009



Ernst Homolka  
CEO

## “Award-winning” Helsinki Music Hall



3D model from the interior of the concert hall

One of the winners of this year’s Nemetschek Engineering Group User Contest is the Finnish engineering firm Vahanen Consulting Engineers. They won an award for the design of the “Helsinki Music Hall”, a 1,700-seat concert hall at the heart of the Finnish capital.

The excavation work started in the summer of 2006. The foundation stone was laid in October 2008 and the first concert is scheduled for May 2011. The initial design was developed while the general construction boom was still in full swing. Consequently, the bids made during the tender process went way beyond the planned budget framework.

Many design changes had to be made in order to reduce costs. This process revealed the strengths of working with Building Information Modeling (BIM): It was easy to include all the changes in the 3D building model and to reliably determine their effects on costs, making it possible to stick to the tight schedule. Two software programs from Nemetschek Engineering Group were used. The 3D model was created using Allplan Engineering and then the structural engineering was calculated using Scia Engineer. The actual layout with the general arrangement and reinforcement design was then done in Allplan again – an excellent example of how solutions from Nemetschek enable “round-trip engineering”.

### A challenging design process

But there were also several technical challenges that had to be overcome. The geometry of the concert hall planned by the LRP-arkkitehdit Oy architecture firm is extremely complex and the very nature of the project means that acoustic standards must be very high. A particular

challenge was the need to isolate the building from any kind of external vibration, as it is located with one side on one of the busiest streets in Helsinki, with buses and trams. Meanwhile, the main train station is on the other side. In addition to this, the building’s proximity to Töölö Bay, an inlet of the Gulf of Finland, means that its underground sections are subject to considerable water pressure and have to be stabilized with numerous foundation piles.

As if this weren’t enough, the roof design also represents a special challenge for the engineers. For acoustical purposes, it is relatively heavy and spans 40 meters. It is burdened further with glazed facades that are hung from the roof. This challenge is solved using several pre-stressed girders.

### Interdisciplinary cooperation

The extensive building services required numerous openings and breaks in the walls and ceilings, requiring close cooperation between architects, structural engineers and building technicians. The design work for this and all the related plausibility checks were also carried out using a 3D building model created in Allplan. Using the standard IFC data exchange format, all the relevant information could be transferred regardless of the software used.

The jury of the User Contest made the following comment on the project: “This project attracted a lot of interest. The acoustic requirements and the complex geometry make it a real technical challenge. The design process draws on several disciplines and makes impressive use of BIM (Building Information Modeling) – not least to deal with the many design changes.”

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