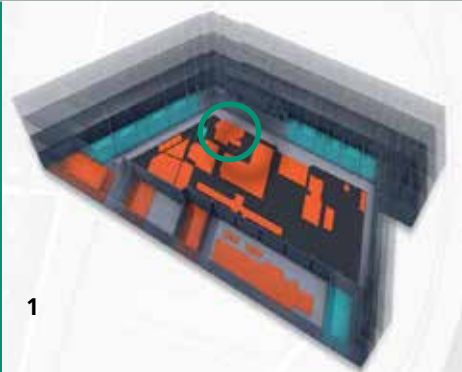


**FRAUNHOFER PROJECT CENTER WOLFSBURG**

- 1 *Layout of the technology center at the Open Hybrid LabFactory, low-pressure plant (circled). (Image: © IC-L GmbH & Co.KG)*
- 2 *Low-pressure die casting plant at Fraunhofer Project Center Wolfsburg. (Image: © Fraunhofer Project Center Wolfsburg, C. Czichy)*

## LOW-PRESSURE DIE CASTING PLANT AT FRAUNHOFER PROJECT CENTER WOLFSBURG

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With the low-pressure die casting plant in the Open Hybrid LabFactory located at Wolfsburg, all manner of questions related to the research and development as well as near-series casting topics can be explored. Tool development and sampling are conducted with the aim of a joint development of casting technology in order to reduce the lengthy integration processes in series production. Using the low-pressure plant, both molds and lost cores such as core packages can be cast. In addition, there is the possibility to work on various materials using gravity casting.

#### Furnace concept and plant layout

The inductively heated crucible furnace with a frequency converter is used in a shuttle system. Temperatures of up to 1650 °C can be achieved in a nitrogen atmosphere, thus in addition to aluminum,

magnesium, and salt, also copper, stainless steel, and cast iron can be processed. Salt can be cost-effectively cast in permanent dies into highly complex cores. Tools of up to 1200 x 1200 x 1200 mm with 3.5 tons with a casting weight of 0.1 kg to 25 kg can be used, while core pulls can be used on the upper and lower clamping plates. A tempering of the tools is possible electrically as well as with oil or a gas-air mix. Cooling is also possible. The quality of the casting process and the components is ensured through purification of the melt with rotational degasification, density index analysis, spectral analysis as well as radiographic testing.