

User Story

Müller Stiegenbau

FARO



With the FARO Focus^{3D}, the dimensions required to construct the staircase are recorded quickly and efficiently.

Bespoke staircases

CONSTRUCTION SECTOR / BUILDING INFORMATION MODELLING *Traditional measurement methods take a lot of time in staircase construction. 3D laser scanners not only record the construction site dimensions more quickly, but also more reliably.*

Franz Müller constructs staircases - or as they say in Austria: Stiegen. His company in Gräbersdorf/Steiermark has been manufacturing staircases for architects and private building contractors with high aesthetic standards since 1996. Each year 500 staircases are produced; primarily from wood, but also from glass or metal. The joinery workshop constructs bespoke staircases, no two are the same. Müller is able to fulfil virtually any requirements for his customers, in terms of both design and material. A high level of measuring accuracy is required in order to ensure that even geometrically complex staircase designs fit perfectly into their designated space. So the joiners must measure the installation site accurately

in advance. If this is carried out in the traditional way, by hand, several complex stages are required. Installation dimensions have to be transferred onto templates and their accuracy has to be checked on the construction site. For particularly complex designs, there can be several site meetings before all the necessary dimensions for the construction of the staircase have been recorded sufficiently, accurately and reliably. Since Franz Müller started using a laser scanner for measurement, this work has been significantly more efficient. He has been using the FARO Laser Scanner Focus^{3D} for this since 2016. During the scan, the laser scans the spaces and all the fixtures and fittings and creates a point cloud from several million 3D

measurement points. From this high-resolution data, a precise three-dimensional model of the environment can be generated. The extremely low measurement errors of just 0.1 per cent compared to the actual property are well within the required DIN tolerances in building construction.

Quick results

As well as the high level of accuracy, the laser scanner has also dramatically shortened the time required by the staircase construction team. The new five-kilogram, lightweight, easy to use FARO Focus^{3D} carries out complex measurements significantly more quickly and reliably than by hand. This is particularly evident in the

Müller Stiegenbau

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Unique, bespoke staircases from Müller Stiegen

case of cladding on curved metal basic structures as well as for properties without angles. Because the laser scanner operates virtually independently, the employee can carry out other tasks during the measuring process; for example discussions with the building contractor or the architect. In addition, only one visit to the construction site is required for measurement. For Franz Müller this results in time savings of three to four hours or around 60 per cent.

The scan data also make the subsequent planning steps easier for Franz Müller. Back in the office, FARO SCENE processes the laser scans. From the point cloud created by the scanner, the software quickly and easily generates a precise, digital, true-to-size depiction of the installation situation and its surroundings. Using the interfaces integrated into SCENE, the data can be exported into commonly used planning software solutions, including Müller's staircase construction software, Sema. This removes the need for the complex, error-prone transfer of measurements taken by hand into the planning software. The responsible planner designs the staircase in Sema and adjusts it to fit precisely into the construction site situation measured with the laser scanner. As well as signifi-

cant time savings, Franz Müller has also been particularly impressed by the efficiency of the planning process using the scan data: "The high level of accuracy of the data capture has made planning and production significantly more reliable in a simple way. And the graphic presentation of the situation on site makes the preparation for the work significantly more simple and effective. As well as that, the dimensions no longer have to be checked on the construction site. Even if building contractors want to make subsequent changes, there is no need for another visit to the construction site. Because with scan data we have comprehensive documentation of the status quo and can use this to redesign at any time." In addition, Franz Müller can now also take orders that would have been uneconomical to carry out without the FARO laser scanner, due to their complexity.

MÜLLER STIEGENBAU

Franz Müller has been constructing extraordinary staircases for any space since 1996. High-quality planning, raw material selection and craftsmanship are top priorities. The family company with 12 employees offers everything from a single source, from consultancy, through planning, to manufacturing and installation.

WWW.MUELLER-STIEGEN.COM

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FRANZ MÜLLER, COMPANY FOUNDER

– FOUR GOOD REASONS –

- 1 FARO Laser Scanner Focus^{3D} can be positioned easily and quickly. This makes it considerably easier to use on construction sites.
- 2 Simple operation allows you to work fast and reduces mistakes. Via the touchscreen display, the user is informed about the scan status on an ongoing basis.
- 3 The precise measurements save a lot of time, the data provides certainty in preparing for the work and in production.
- 4 The comprehensive documentation of the staircase installation situation is valuable for redesigning or making changes



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