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## BIM-OSH: BIM and Auto-ID based occupational safety and health

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Despite a slight decrease of the number of accidents at work on German construction sites in recent years, prevention activities should be strengthened and started explicitly in addition. In particular, a large number of accidents on construction sites are carried out by the collision of different trades and missing appropriate PPE (Personal Protective Equipment) for workers of adjacent trades. An important potential can be seen in the optimization of the safety and health by making available pre-defined information about safety and health throughout the life cycle of buildings. Using this information, preventive measures can be taken faster, more effectively and safely. The method of building information modelling (BIM) forms the basis for a comprehensive building information model or building data model. The definition of national and international standards for enterprise-wide use of BIM method is currently under development. In addition to technical standards, depth of information and information content needs to be redefined. From the perspective of the applicant, the method of BIM in conjunction with the Auto-ID-based tracking of actual process data, however, provides additional data to plan data among other OSH (occupational safety and health)-related processes. This data can be used for further phases of the life cycle of buildings, that is in the building phase, the use phase, rebuilding phase and the decommissioning phase. These have considerable potential, especially for the optimization of occupational safety and health. The primary objective of this research project is to identify, define and standardize health and safety information and provide them for preventive measures with the BIM method.

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## Design analysis of structures for residential light steel framing systems

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The light steel framing technology has progressively increased because of the fast progress in the building industry. It has a lot of advantages from the technological point of view. The development of dry building systems based on steel members have spread in the US, Australia and Japan; and are now gaining market in European countries as well as in countries in development such as China and Brazil. These dry buildings address a new form of construction in which steel members are designed to act with “dry” materials, such as gypsum plasterboards. Although the gypsum plasterboards have a structural function, they are not normally used for taking active loads. The structure itself is made of steel frames. The systems often have load-bearing walls, and the floors may be of light weight steel profiles. They are designed for industrial production and can contribute to a more efficient building process.

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