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## Summary of diploma thesis

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**Subject:** Changes in production methods in the construction industry – motivation and impact of traffic

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Nowadays, logistics is playing an increasingly important role. It can greatly influence areas such as the construction industry, especially the length of the construction process. Construction means nothing else as transportation. In comparison to stationary industries, not only materials must be transported to building sites but also machinery and personnel. Construction projects would be impossible without construction site traffic. Therefore the diversity of transportable goods and materials is huge. Figures in a current study “*Wirtschaftsverkehr Rhein-Main 2030*” der IVM GmbH show that about 41% of freight traffic is connected to the construction industry. On site traffic is much more significant as previously thought.

The following thesis will provide an insight concerning traffic relating to the traffic situation in building projects. In order to show these influences it will be explained what effects they have on the construction process in general and in addition what influence the traffic has on the actual construction and its planning. Amongst other details it will be shown that although actual details regarding construction activity are comprehensively laid out under law, regulations concerning traffic which is directly involved in the construction are missing. This means that no permission is needed for the transport of building materials to and from the construction sites. The thesis will concern itself with taking a closer look at project planning with special attention given to building permission and also tenders and placing. This will address factors such as legal aspects and traffic conditions.

The thesis will show that much depends on the initiative of the construction manager and his team as to how they deal with transport problems. Of course traffic regulations must be strictly adhered to, “StVO” for example. Government officials and local councils usually come into the picture only when difficulties arise or more seldom when difficulties are envisaged. However this is happening more often because of the growing awareness of environmental issues. Over the last

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years people have been complaining more about problems concerning construction sites. For example, dirt, noise, tremors, vibrations and increased traffic. Construction sites, especially those in inner cities, ones covering extensive areas and ones with restrictive spaces do tend to cause so called unpreventable or unsolvable traffic problems. According to road traffic authorities, there are 3 phases in the duration of a construction project that can affect traffic. These phases have different demands and bring with them various challenges concerning both the supply of materials to the site and the removal of waste from the site. Specific examples will be given in detail as well as practical examples with particular conditions. These will be analysed to show if aspects of the traffic situation have led to suitable solutions concerning building processes and if procedures have been executed to alleviate potential traffic problems. This demonstrates that construction plans might be able to seriously elevate the negative effects of on site traffic. If it is desirable to keep disruptions to the minimum in the future, it would be thinkable to integrate the traffic aspects into the whole approval process. It should be considered from when on and from which size of a construction project, new legal guide lines within the construction procedures must be implemented.

It should be said that the subject dealt with in this thesis is concerned with a multifaceted subject. It deals with the area of traffic engineering, the construction operation as well as the legal aspects in the form of current legal regulations and guide lines. The information and the ensuing results can only offer an insight. Apart from the general research literature, interviews and scientific talks have also been carried out during the research for this thesis, one of which was with the chief of the road traffic authorities Frankfurt am Main. The outcome of these talks was valuable in confirming individual resulting facts as well as providing valuable ideas. The protocols of the meetings and the interviews can be found in the appendages of the thesis. The essential gist of these meetings appear again during the course of the thesis.

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