

# Final reflection

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*Pathways for next adopters to adopt industrialised timber construction in Dutch practice: a contractors perspective*



**Final reflection**  
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# Colophon

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## **Introduction**

In this reflection I would like to look back on the past months of working on this thesis towards the current moment. Specific emphasis will be placed on the choice of method (how?) and the argumentation (why?) which were defined for the P2 moment. Moreover, an attempt will be made to answer the above questions and to what extent it did or did not work. Also, the relation between the graduation project topic and my master track and master programme, how I dealt with feedback, the value of my way of working and my used methods and finally, but not least important, how I tried to balance working-, private- and study time will be described.

## **Defining an interesting research topic**

Already in the beginning of the year 2022, I became interested in the topic around timber constructions and was reading up on articles and books around the matter. This became more specific when I decided to go for this theme for my thesis. After reading more in-depth articles about recent developments related to industrialised constructions and the potential of some of the innovative ideas to solve several problems in the construction industry, I knew for sure that this was going to be the topic for my graduation research.

After following the course Leadership and Strategic Management by Paul Chan, I also became interested in the topics and theories around change and innovations. Together with the growing interest in industrialised timber constructions, this resulted in a summary proposal for my research. After a first round of feedback, I noticed that this subject is also relevant at the TU Delft as a research subject and that it has great potential to look into. Soon I had contact with Paul about becoming my first mentor and also Erwin Mlecnik showed that he was interested in my research proposal, right from the start. This resulted in a relatively fast registration of my first and second mentor, which was good to know so early in the process.

Another reason, besides being just interested, for Paul to become my first mentor, is that the subject around industrialised timber construction and the related process of adopting innovation is categorised under the graduation chair Design and Construction Management. This domain addresses questions related to process control in the development and realisation phases of the construction of buildings. Specifically, the building process innovation is mentioned as an area of attention. Among other things, improved cooperation between parties to the building process is critical for innovation and therefore an important topic within the chair.

## **Working towards the first official moment: P1**

When starting the literature review process, I discussed with Paul how I could best process all the sources and information. This resulted in an Excel document in which I systematically documented titles, authors, dates, short summaries and other important aspects, with the aim of building a comprehensive summary of the read information. Soon a lot of information was documented in this file. Besides, I put together a file folder for hard copies of the most relevant and interesting papers. I did this because of my preference to read texts on paper instead of only in a digital way. Also, having a printed version of the text enabled me to be creative with colours and comments in a flexible way.

Towards my P1 period Paul guided me along some critical thinking steps to define a proper problem statement: What is the issue? What do we know about this issue? and What do we not know about this issue?. Answering these questions forced me to think about building up the argument in a systematic way. The structure of thinking can still be noted in my report. Also the Research Methods course helped me with this process of building up an argument and to make a start on thinking about the possible research methods to find an answer to the related main question.

The main feedback I received after presenting my P1 report, was that the review of previous studies had to be elaborated in more depth and documented in a more structured report. The P1 report was more an 'information dump' instead of a structured way of building up research. Also, a deeper analysis of the proposed target group, next adopters, had to be done to explain the characteristics of these different actors and also pin down more specifically on how the categories related to the choice of key actor(s) involved in the study. For the P2 report I made sure to elaborate on these subjects.

### **Finally 'getting my hands dirty' in practice**

After the P1 presentation, I felt the urge to present my ideas and thoughts about the research topic to practitioners in the construction industry. The main goal was to get feedback on the content and to be directed to the latest developments that are accurate for the sector. To follow up on this, I scheduled meetings with two market parties who are currently developing industrialised timber construction concepts. These are companies that initiated and engineered an innovative industrialised timber construction design and fully developed this over the past couple of years. One of them already realised a handful of projects in the last two years.

Perhaps the most important result of the conversations was the connection with a contractor. This contractor did not have any experience with industrialised timber constructions, but was just contracted for their first timber project. Therefore I thought it would be interesting to interview the people who are involved in this project and analyse the process and strategy this organisation follows. As the next step, I scheduled a meeting with the operational director to introduce my research and discuss whether the case would be usable. This conversation turned out very interesting, and they told me that I could speak to as many people as I would like about this new and exciting project.

Meanwhile speaking with practitioners for my research topic, I was also able to practise my interview skills during the RM2 course. In our group of 3, we all had to execute 1 interview and process the transcription following certain steps. For the processing of the data we had to use the Atlas-TI software. This practising round was very useful, and showed how the interviews should be done for our own research.

Next to speaking with practitioners, I also visited some industrialised timber related public events. For example, I visited a symposium called "The Wooden Age" (in Dutch: De Houten Eeuw) in Pakhuis de Zwijger in Amsterdam. During this afternoon, I listened to several speakers and talked with other interested people about the latest developments around industrialised timber. Again, this led to some useful contacts.

## **P2 in sight**

Towards my P2 presentation, I mainly focussed on the formulation of my research questions, the research method, main objectives and my research plan. Also, I dived deeper into the relevant literature and sharpened my know-how especially on the topics I received feedback on after the P1 presentation. Furthermore, I came up with a conceptual framework and first concept of an interview protocol. Lastly, I put together a plan for the rest of the research taking into account the P3, P4 and P5 dates.

In my P2 presentation I explained how I was planning to execute my research and why this would be the best way to do it. In short, the method I chose was doing interviews based on my findings in literature. I aimed for qualitative interviews with a semi-structured nature. With this form of interviewing, I could build up on literature related to my key concepts while at the same time have the opportunity to ask follow-up questions and have a more open conversation. Speaking in jargon, combining both inductive and deductive methods. In total, the aim was to interview around 10 people.

## **Data collection time**

A couple of weeks later, I finished my first 2 interviews. Both at the first contractor. I got the opportunity to speak with the operational director and main director about their experiences thus far related to the adoption of industrialised timber constructions. I had two very interesting conversations which lasted around 60 minutes each. I got the chance to ask the questions I prepared and the interviewees also had their opportunity to bring up topics they found important by themselves. This combination resulted in 2 good first interviews, on which I can build and improve towards the next ones.

Besides that I learned a lot by myself while executing these first two interviews, I also received feedback on my interview protocol and questions from my two mentors. The main points of feedback were: use easier words in my translation from English to Dutch, search for quantitative aspects you can question the interviewee, focus more on relationships/key partnerships, make the list of questions shorter because of time limits, ask open-ended questions and thus allowing the interviewees to tell their story in an uninterrupted fashion, also ask about disadvantages and finally, justify the sampling strategy. With both my own experience from these first two interviews and the feedback I received, I feel ready for the interviews to come.

In the following weeks I conducted the rest of the interviews. The reviewed interview protocol proved to be very effective and the data proved to be very useful. Processing all the data was a pitfall. Beforehand I did not expect this part to be so much work. In total I conducted 8 interviews. 2 people from the first company, and from both the second and third company I spoke to 3 people. This resulted in 8 conversations from around 60 minutes that needed to be transcribed and analysed. To analyse the data in a structured manner, I used the Atlas-Ti software.

## **Balancing between working-, private- and study time**

The period between the P2 and P3 presentation was mainly focused on executing the interviews and processing the data. During the summer holiday, which was also in this period, I shifted my focus from working on the thesis to working for the contractor I work for myself. Looking back, this was not the most thoughtful decision. As the P3 date became

closer and closer, I felt that I was short on time and that I could barely present enough results during the P3 presentation. However, I still was convinced enough to make up the lost time and be ready for the P4 moment in time. Because of my own confidence, I also convinced my mentors to let me pass the P3 moment with a happy face.

Soon after the P3 moment, somewhere at the beginning of November, I realised despite my efforts, that I would not make it on time to be ready for P4. Processing the data was much more work than I had thought in advance and at the same time I was very busy with my work at the contractor. In addition, during this period I bought a house with my brother, which also required a lot of my attention while writing the thesis. The combination of these factors of studying, working and my private situation, caused me to not produce enough work to be ready for the P4. One week before the P4 deadline I let Paul and Erwin know that it would be better to postpone the presentation and use the time as a feedback moment. Luckily, both Paul and Erwin understood my situation and agreed on taking a bit more time for the thesis.

### **New year, new study time**

The next possibility to schedule a P4 moment was April the next year, so we did. This made it possible to spend up to twelve new weeks extra on writing the thesis. The first weeks of this period, I used to finalise the data analysis. Although I already had a good start, it did not work out the way I wanted it to work. I got stuck. The first steps in the analysis, transcribing and coding the interview data, was going well. But after that, it was hard for me to decide on the following steps to work towards a result. Paul helped me out by introducing the so-called 'Gioia method'. This structured method of analysing qualitative data proved to be very helpful in this process.

Now I could finally finish the data analysis and come up with usable input for writing up the results and conclusions. Ultimately, the goal of the thesis is to come up with adoption pathways for next adopters in the Dutch industrialised timber construction sector. So I needed to combine all my findings so far into a strong and concise end of the research. I am confident that I got it done and that I am now ready for the period 4 presentation. My expectations of the P4 moment are that the results for now are sufficient, but that there is also room for improvement. The last 5 weeks between P4 and P5 can then be used to process this feedback and make the overall research stronger.

### **The final countdown**

On Wednesday 8th of March I presented my findings in the P4 presentation. The presentation went very well and I could convince the committee of my research process and the results. However, the report still needed some work because it was lacking the discussion chapter and some figures needed more explanation. Luckily my mentors were confident enough to award the presentation with a 'go' so that I could finalise the last missing bit in the coming 5 weeks towards the P5 moment.

As said, the main point of critique was the missing discussion chapter. This chapter is important because it makes the researcher reflect on its conclusion in relation to the literature review. Questions to ask yourself are for example: What was surprising? What was new? Did you gain new, interesting insights? And How did the final results differ from your expectations and/or earlier findings in literature? To make sure that I would process this feedback well enough and that this chapter would be completed on time, we scheduled a

'catch-up' meeting in 2 weeks from the presentation. In this meeting I would need to present my main points for the discussion and have the possibility to gain some last feedback before handing in the final report.

During the meeting we discussed the input for the discussion and some other points of attention. The mentors gave some extra feedback and suggestions so that I could finalise the discussion chapter and give the overall report a quality boost. Deepening the analysis of the findings could help make the research more valuable and therefore better. In the end it would be great to be able to end my studying career with a nice grade instead of barely making it with a grade that is just enough.