# Micro Poker: example of an agile practice dedicated to architectural design.

### Introduction : an era of changes

The paradigm shifts brought about by the arrival of BIM technology in the architectural world, particularly in the architectural design phase, is changing the way architectural firms are making design in France. It requires adaptation and/or creation of digital and collaborative practices to recreate teamwork that is conducive to design and quality. BIM technology isn't completely implemented because it changes the way of working.

Lean is about quality and performance, reducing waste and continuous improvement. Coming from software engineering, agile methods, are iterative methods (like architectural design) and aim at the same things, but focus on the rational motivation of designers and customer satisfaction. These are not process-oriented methods, but rather good practices oriented with the aim of improving group awareness. We propose to apply agile practices in a collaborative architectural design pedagogical project to measure their impact on quality of collaboration.

### Agility to oversee BIM technology

Our research takes place in the French architectural design field where the digital transition is still in progress and BIM technology not yet implemented. Nowadays, on the professional field and the pedagogical field, we notice that this transition is only seen through a technological approach and not a human approach. We make the assumption that this could be a major reason explaining why the BIM integration is still at an early stage.

Indeed, BIM technology increases the amount of work upstream, changes digital and collaborative practices and generates misunderstandings, which creates a climate of mistrust between the actors of a project, and rigidifies coordination. The BIM technology is transforming the traditional design process that needs to be reviewed and improved. We identified various communication problems in a BIM project environment during interviews with architects and during our project lessons: the actors in a collaborative project have difficulty sharing the results of their ideas, and experience difficulties in identifying, quantifying and distributing design tasks. The use of new BIM tools makes it even more blurry to define a task.

The hypothesis is that inserting agile practices into design activities (such as the division of tasks) will improve communication and therefore the quality of the architectural project. Agile methods and practices are based on communication within the design team and with the customer, and help to build trust. By bringing communication, mutual awareness and therefore upstream decision-making, we improve trust, exchanges and thus quality.

An example of a common practice in the agility field is the planning poker. This practice is based on a deck of cards facilitating task scheduling. We decided to adapt it for architectural design.

### Adaptation of an agile practice: the Micro Poker

The classic Planning Poker is a set of 13 cards with facial values from 1 to 100 and following an exponential distribution (1, 2, 3, 5, 8, 13, 20, 40 and 100). All players choose a matching card according to their opinion on the estimated duration of a task and reveal it at the same time. This leads to a debate between the players with the highest rating and the players with the lowest rating.

During preliminary experiments, we found that the usage of the standard set of cards was quite confusing for our panel of designers. We identified that the main issue was the quantity and the granularity of the values displayed on the cards. Then, we managed to reduce the set to 4 cards, now called Micro Poker, in order to concentrate not on the estimation but on the dialogue that follows. In addition, we have added different game scales to accommodate more scenarios, other than a need for numbers (S, M, L, XL for an order of magnitude or colors from green to red).

As part of an architectural design exercise, Master 2 AME students experience the Micro Poker. We place ourselves in a context of a BIM collaborative work. Students come from differents cursus, they don't know each other and have different backgrounds and skills. The Micro Poker makes it possible to better estimate the duration of tasks to do and their complexity thanks to the specific knowledge of every actors. This is an example of an exchange sequence:

> Actor 1: How long does it take to place the point cloud in the 3D model we scanned yesterday? We use S, M, L or XL. (everybody chooses a card, and reveals it at the same time; actor 1 and actor 2 with extreme card start talking).
> Actor 1: I have put a S card because it is not difficult to import a cloud point in the software.
> Actor 2: I do not agree! I have put a XL card because by experience, there is always something that goes wrong, and we need to clean the point cloud before import it.
> Actor 1: Ok I have not thought about that.
> Actor 3: And we need to finish the ground modelling before that.
> Actor 2: Right! Ok, I will clean the cloud, during this time, can you finish the ground?
> Actor 1: I will help him, I am comfortable with that. So, for the next round: how long does it take to finish the ground? (here starts a new round).
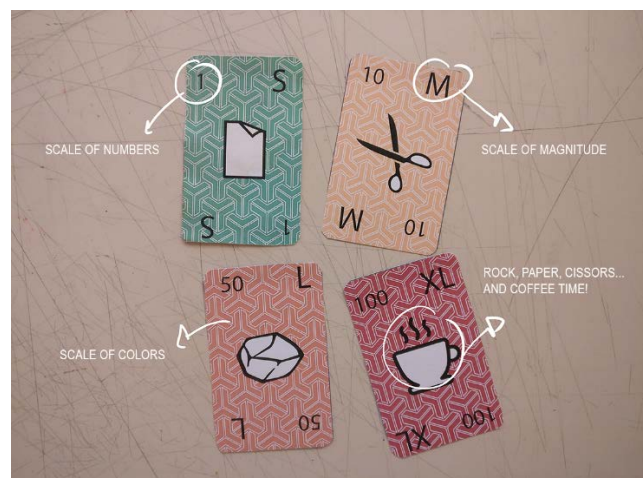
## Conclusion and perspectives

The Micro Poker was very positively received by the students. It allows them to discuss how much work they need to do, how they will collaborate, who does the task, etc. It permits actors to discuss about the complexity of a task, what they usually do not do in traditional design. Indeed, new usages bring about by the BIM must be evaluated et appropriated. This makes it possible to better understand the tasks, and to understand its ins and outs.

The Micro Poker will be tested in two architectural firms in the next few days, in a professional context. We also had the idea to create an app to be able to work remotely and synchronously.

**Illustrations :**
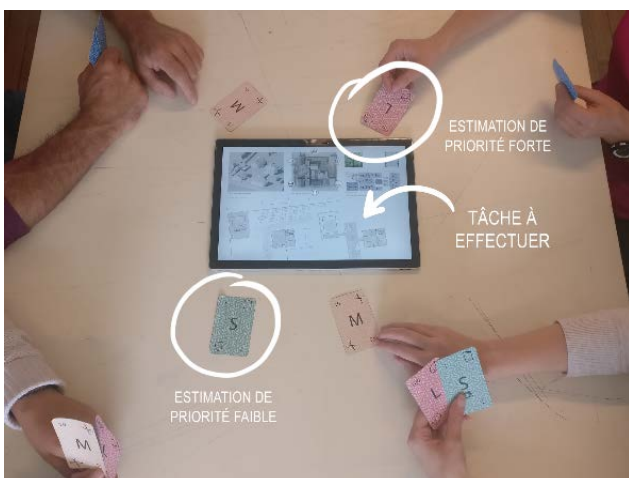


Example of a round



The set of cards