

BIM Practice in Macedonia through surveys

Today issue with new buildings is that they use in general as twice (according to Carbon Trust, 2011) as much energy and have double the carbon emissions than predicted. This energy performance gap, with its serious financial and climate change implications, has been blamed on everything from builders not installing insulation correctly to occupants leaving lights on. However, new study (The Building Performance Gap: Are Modellers Literate?, Prof. David Coley) suggests another factor is at play: the “literacy” of building modelling professionals. What is it about simulation software that has improved then?

Building information modelling (BIM) is an information model of a building or construction project and consists of computer-based data and information such as function, materials used, economy, shape, etc. which is useful in managing and supporting all the lifecycle stages of the physical asset (McAdam, 2010).

BIM also stands for the practice of building information modelling. It is therefore a combination of computer software applications, systems and processes about work practices used by Architectural Engineering and Construction (AEC) sector professionals and clients.

Project TRAINEE (www.trainee-mk.eu) has conducted a Survey to assess the penetration and total acceptance of BIM practice in Macedonia, so we can tailor made training programs to address this issue properly. Results will be used to support TRAINEE in the activities related to promotion of BIM among building professionals and activities in preparation, organization and implementation of trainings for BIM.

WHAT WE WANTED TO FIND OUT?

- 1) Questions about respondents'
 - a. geographical location,
 - b. field of construction sector,
 - c. number of employees,
 - d. current career (architect, or engineer)
- 2) Questions about the skills of respondent
 - a. in drawing,
 - b. CAD tools,
 - c. BIM, and software
 - d. Obstacles for BIM acceptance

Questions from part two were precisely addressed with survey logic jumps, depending of the answer.

Here you can find most interesting results:

PART 1)

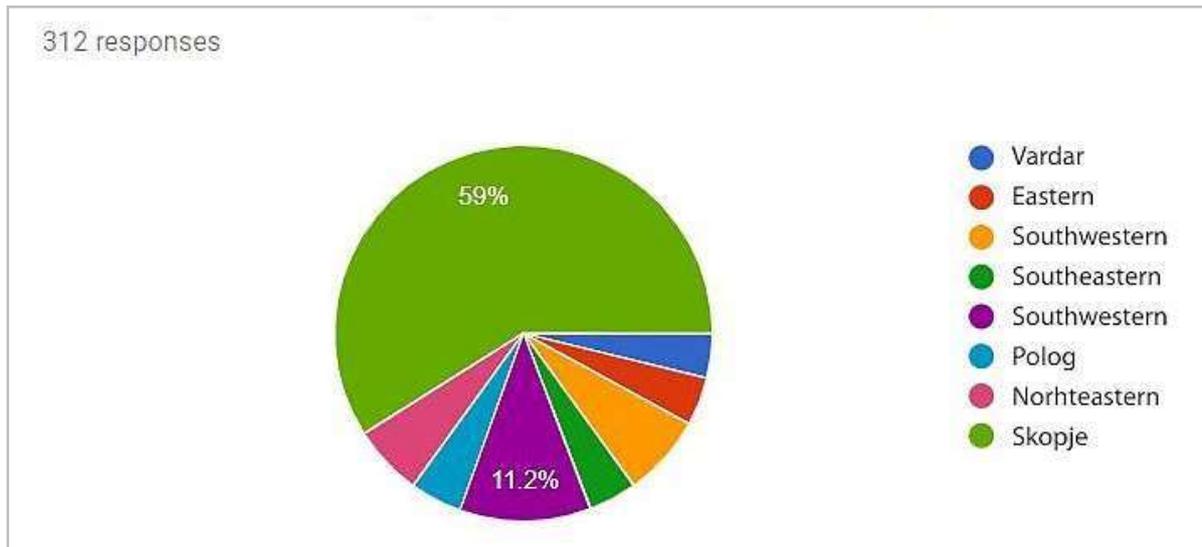


Figure 2 - Region of the respondents

The result is very clear and expected because over 60% of the construction works are done in Skopje in residential sector.

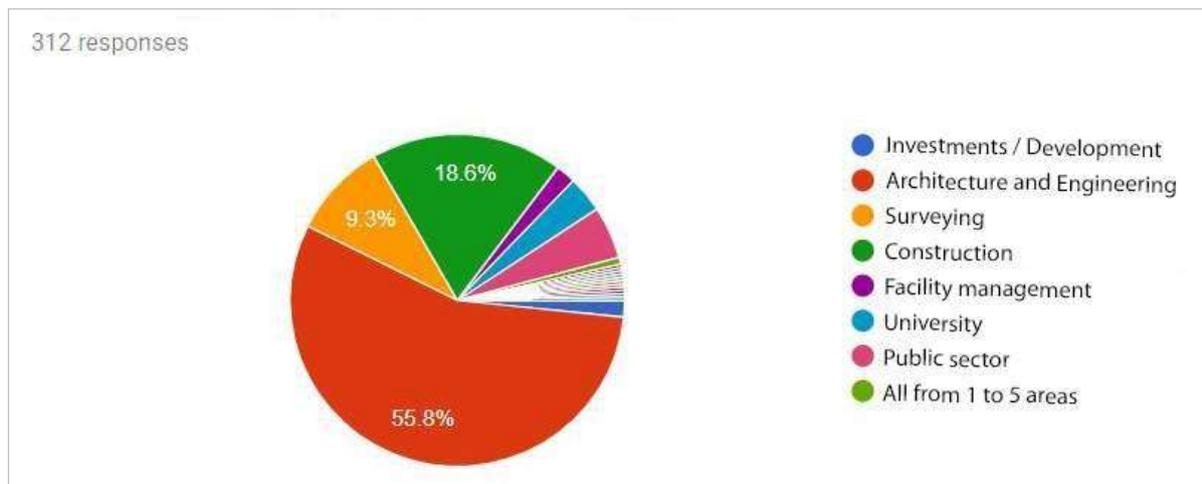


Figure 4 - Field of sector

In general, there were 3 main sectors: AEC, Public and University. As results shown on Fig.4 most of 312 respondents belong to AEC (architecture, engineering and construction) sector with over 83%, or 261 persons. Engineers and architect working in the field of design of buildings represent over 55% of total respondents or 174 people.

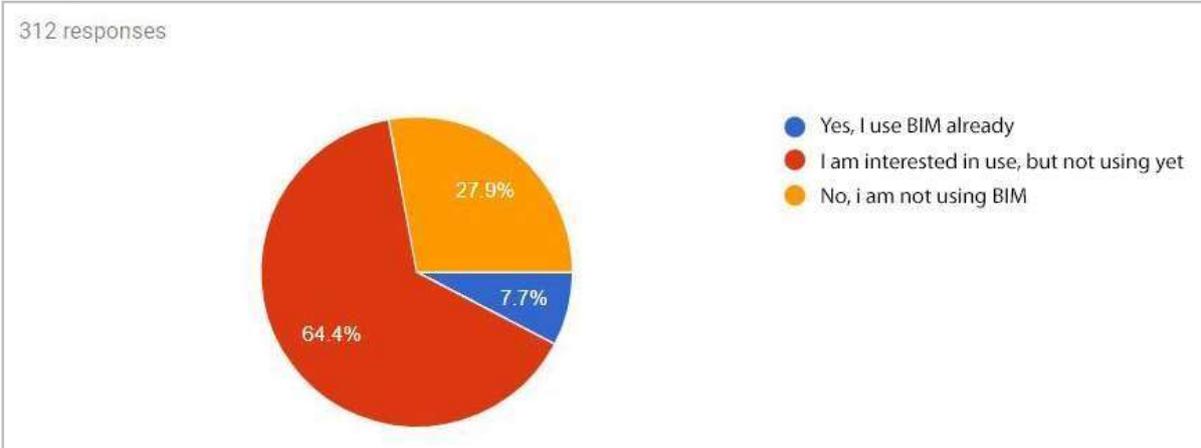


Figure 5 - Do you use BIM

The last question in this section for all that respond to the survey was “Do you use BIM”. The results shown on Fig.5 gives that only 7.7%, or only 24 out of 312 are using BIM tools in their practice. Most of the respondents or 65%, are interested in use, but not using yet.

PART 2)

BIM Design tools

The data was analyzed to discover skills of respondents and their used method in design among Architects and Engineers. For this reason, respondents were asked about their skills in design tools by three simple questions: “What BIM software do you use?”; “How many projects you deliver using BIM?” and “BIM experience and skills?”.

The results show that only 24 respondents (7,7%) are using BIM design tools. The two commercial tools are most popular, as Graphisoft ArchiCAD with 37,5%, and Autodesk Revit with 29,2% representation. Trimble Tekla is third tools but lacks in term of popularity with 8.3% between the engineers.

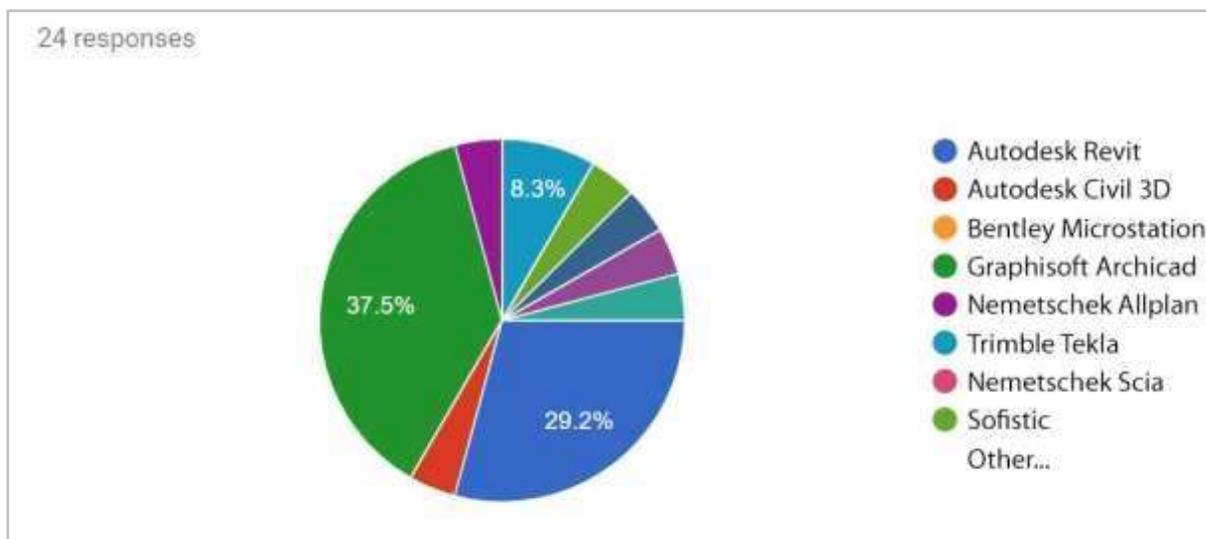


Figure 6 - What BIM software do you use?

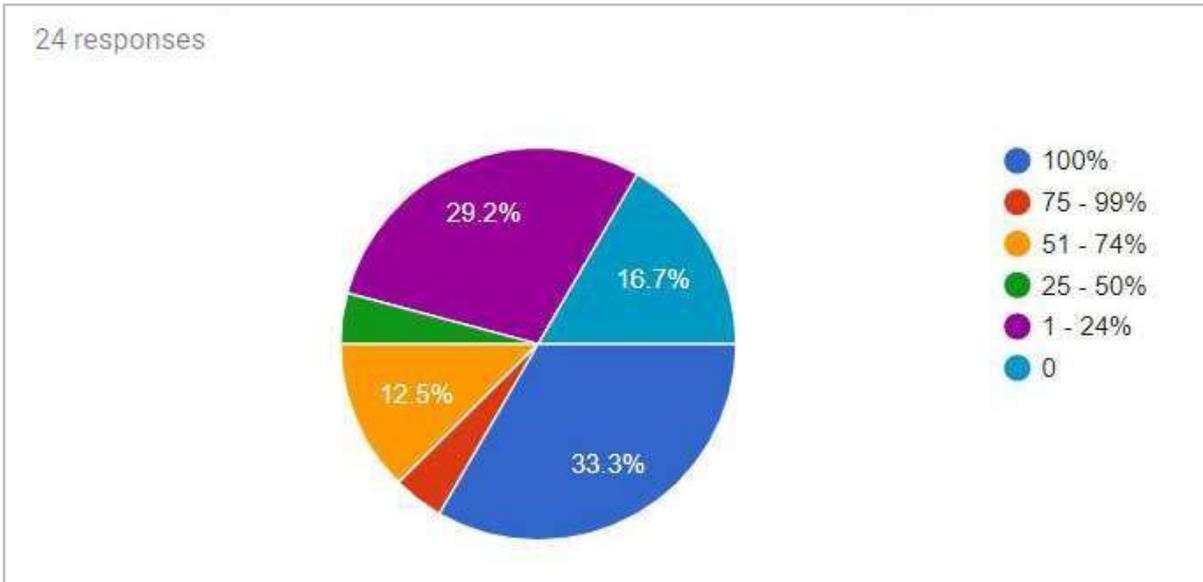


Figure 7 - How many projects you deliver using BIM?

However, only 33,3% (8 people) of those who are using BIM tools, deliver 100% of their designs in BIM and almost 30% are delivering between 1 and 25%. The Fig.7 gives interesting information that even if respondents familiar with BIM, 17% (4 people) of them do not deliver their design in BIM at all.

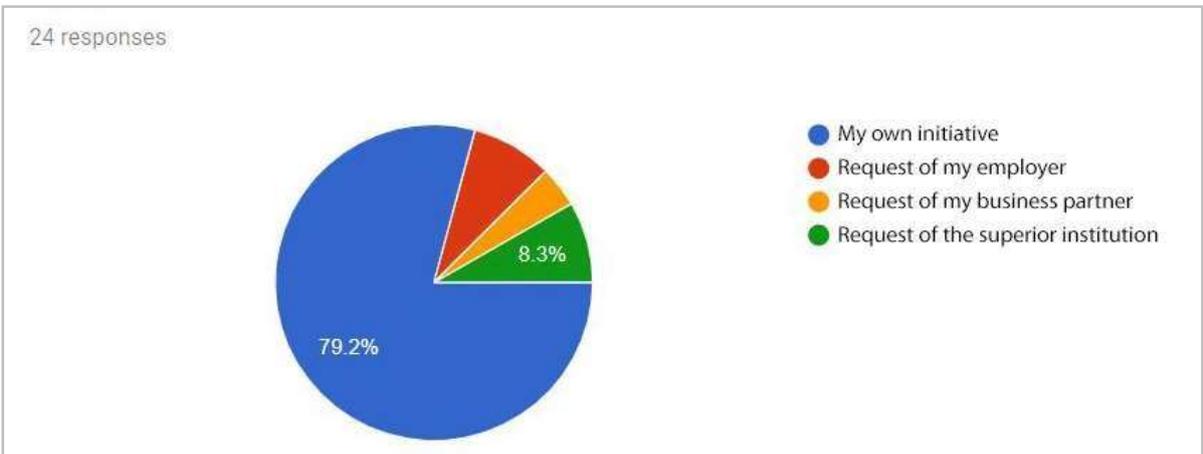


Figure 9- Why you are dealing with BIM?

Almost 80% of those who started with BIM tools, have stated that it was on their own initiative.

People related barriers include, the reluctance to change, but most of them pointed to lack of BIM trainings, very low demand from the market for BIM design of the projects, lack of skilled professionals, high initial cost of implementing BIM standards and specifications. This includes the cost of down time within the organization in order to change the current design workflow. It also includes the cost of continually educating and training employees in terms of the implementation of BIM standards and specifications, keeping in mind that there will be a learning curve involved for even the most proficient BIM user.

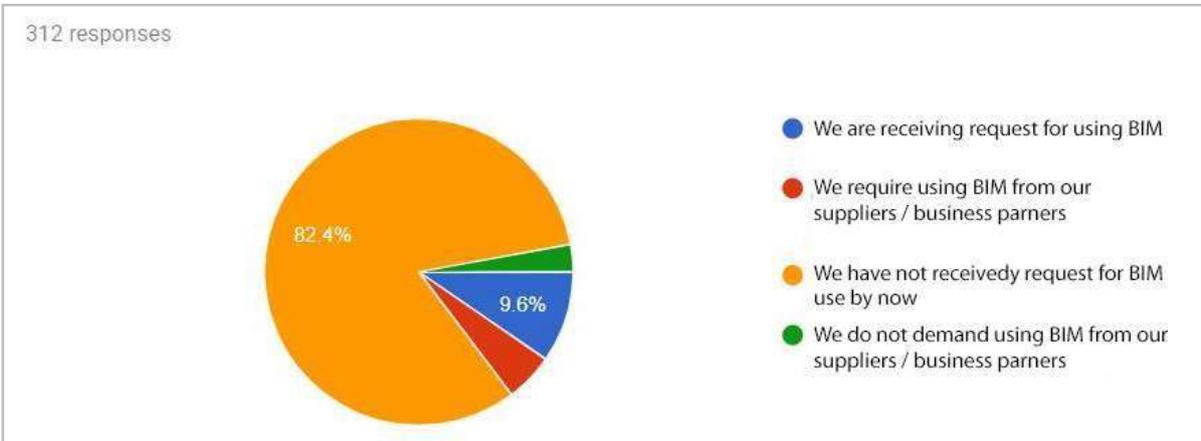


Figure 10 - Demand for BIM when doing your business

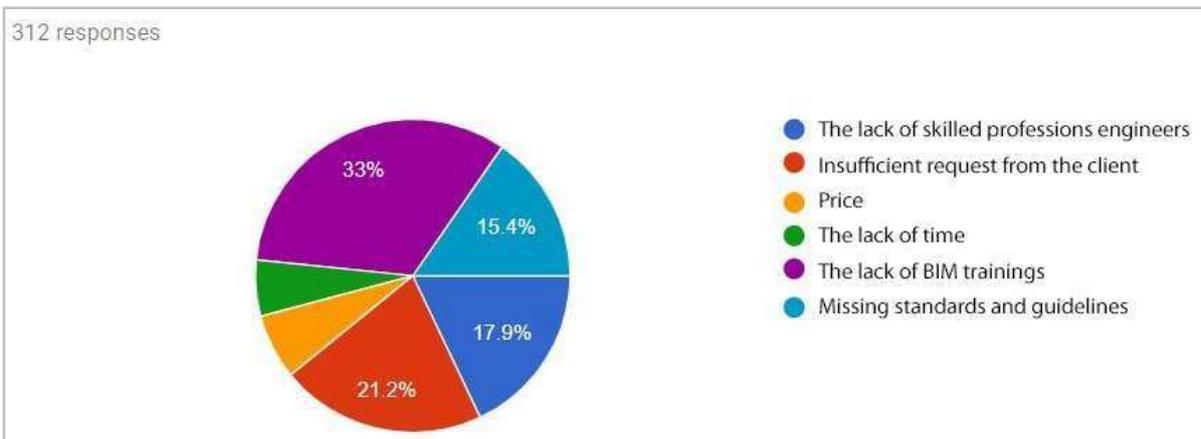


Figure 12 - Main barriers to start using BIM on projects

We can say that biggest challenge will be the low-demand of the delivering the designs in BIM. This follows with very limited training providers only for commercial software where the BIM as process/methodology is taken into account during the training. On the other hand, brain-drain process of high skilled professional engineers with expertise in BIM causing significant gap for those few companies that work on international level with BIM software tools to continue and develop themselves.

WHAT WE'RE GONNA DO NOW?

Please read full Survey report which can be found on our web site and you can download it FREE: <http://trainee-mk.eu/downloads-deliverable> (D3.1)