

The opportunity to undertake a project which would involve the whole school community was exciting and there had been a lot of discussion and concern around the lack of fitness that many of our students had. Although we had a specific criteria when selecting the students all of the group could not understand why we couldn't just decide what we wanted and build it anywhere. The opportunity to work with our Engineer has been both stimulating and challenging for all of us involved.

We soon realised the importance of maths and science skills as well as problem solving, critical thinking and seeing the way to solve a problem from different angles. Working with Jordan enabled the students to see and understand the complexity of finding a solution to our problem and working together as a team. They were often at first unsure of the correct question to ask of Jordan especially when they realised that their first site choice may not be suitable due to slope and instability of the land.

Students came to realise that they all had different strengths and while working in their small groups each had to take on a particular role. If they supported and trusted each other they were more likely to be successful. They benefitted greatly from the expert advice they had and mentors that helped aspects of the inquiry. The hands on experience of working with Jordan and going out to the school site and making their own calculations using the things they had learnt from him had an impact when we were at the other schools we visited and also creating our own design.

As they grew more confident on technical aspects they were able to ask important questions and ask for clarification. Their report to our Board of Trustees was very successful and they made a compelling argument as to why they should support the project and help them to raise the funding to complete the project.

---

## **Reflections and Challenges:**

### **Time:**

The time needed to make this a successful project required time and commitment not only from the students but from the school and classroom teachers. Once we became engaged in the project we needed to spend larger blocks of time. With other things happening in the school this wasn't always possible so we looked at working smarter. Many of the students who in our school are able to access their work at home did so and worked on it in their own time.

### **Team Selection:**

Some of the students selected had a stronger slant in the maths, science, technology field which was great and they acted as mentors to the others and transferred skills. At the beginning we didn't to work with some students more so they grasped the underlying concepts.

### **Unforeseen Obstacles:**

As we were doing the project we came across challenges we could not have foreseen such as the Ministry of Education's decision of where to place our new buildings. This still remains undecided. After working with our Young Engineer Jordan we realised the original place we had hoped to use was not going to work due to structural and engineering concerns. This was a huge learning curve for the students.

### **Knowledge:**

Our knowledge was challenged as we had no previous engineering, design, building scale model, land contour and analysing this type of information skills. This was frustrating not only for the students but also for me as I needed to be a step ahead of the students or at least support them to ask the right questions of Jordan when he worked with us. We at times needed to clarify things at an earlier stage so this was a concept we needed to be aware of. At the time the engineering terminology was a little above us as it was more technical. We could have used email more to link into his knowledge when there were gaps between visits.

## **Developing our own experts:**

Some of our students became experts and thus teachers to the other students. Other classes have also asked these students to come and talk about engineering as a career as they are looking at occupations. This has been exciting for the team. as a result of this some boys have looked at finding out more about some of the things we have learnt.

The design feature and building to scale engaged the students and then they had to relate it to the council plans and problems re drainage, slope etc. at each stage they needed to connect the different aspects of the project.

## **Timeline:**

This was very hard to keep to and frustrating because of all the different things that affected it. Looking back we should have started the project earlier but as we had massive rebuilding going on this was not an option. Jordan was great at outlining this and how it is used in jobs so we looked at one ourselves but the times had to keep moving. This of course happens in real life but the students found this difficult to adjust. This is something I have needed to reflect on as I needed to focus more and think ahead of the knowledge we needed and how we would get the information. i too could have emailed which may have been faster.

## **Teamwork:**

It was really important to spend time at the beginning on establishing the team and working on co operative skills. A group of really bright students with their own ideas doesn't always work well as a team. This was an important feature and needed time early on.

## **Authentic Inquiry:**

This has been an important aspect as we know we want to see this project through to completion so the students have great ownership as they see themselves using it and it being beneficial for all students and for the community.

This has been an amazing journey and an exciting challenge that will still continue for this group of students and our school.

---