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The Benefits to Industry of Integrating Practical Training Within the Teaching Curriculum

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SUMMARY

Introduction

The department of geology of the Institut Polytechnique LaSalle Beauvais prepares students for professions in geosciences, for many years.

To allow students to gain knowledge in geosciences, the program is specially based on practical applications in the field (numerous geological field trips in sedimentary, metamorphic and magmatic domains), in-company internships, a research report in third year.

This poster proposes to present a new research project which becomes integrated into our policy of sustainable development and into our education program in geology.

A project of deep geothermal energy in the LaSalle Beauvais Campus

At the moment, the department of geology of the Institut Polytechnique LaSalle Beauvais proposes two diplomas in geosciences :

- Technicien Supérieur Professionnel en Géologie (Professional Technician in geology), level two diploma, the equivalent of a University degree (bac + 3)
- Ingénieur Géologue (Geologist Engineer, bac +5)

The training course provides access to functions in two main domains of specialties :

- Energy and mineral resources : petroleum geology, mining and quarry,
- Planning & Environment : geotechnic, natural hazards, marine geology, hydrogeology and industrial risks.

Figure 1: *The Institut Polytechnique LaSalle Beauvais : a privileged site to learn geology.*

Since 2007, the department of geology develops some new research projects which complete the teaching resources implemented in our education program by involving students.

One of these projects concerns a deep geothermal energy program that the department of geosciences of LaSalle Beauvais wants to develop to give a new solution of energy resources for our establishment.

The team of this project is composed by:

- Yannick Vautier : geologist, Head of Geosciences department
- Benoit Proudhon : geologist, Head of project
- Olivier Bain : geologist.

The project of deep geothermal energy on the LaSalle Beauvais campus was born in 2007 when IGAL (Institut Géologique Albert-de-Lapparent) has merged with ISAB (Institut des Sciences Agronomiques de Beauvais) to form our Institute.

This reflexion becomes integrated into our policy of sustainable development at LaSalle Beauvais.

Figure 2: *A project which completes the teaching resources implemented in our education program by involving students.*

The objective is clear : to make a new generation campus, an EcoCampus.

The main idea is to realize one or two deep wells which would reach the basement of the Paris basin.

This project can interest several establishments around the Institute we can work with : the Beauvais Hospital, the Aquaspace nautical center and others. This could be for them a new opportunity in terms of energetic resources.

Today, the main questions are : what is the technical feasibility of this project ? Is it a good economic solution for our campus ?

To answer to these questions, the team needs to find the best industrial partners who will know how to imagine with us an infrastructure adapted to the local geology and to the economic context.

Originality of this project : to propose a new way of education in geosciences.

To help the development of our training strategy, the department GEOS Institute develops this type of research project to propose to our students a direct illustration of many courses like:

- Drilling (technic, casing, mud-logging, core, sampling...)
- Core analysis by constituting a cores collection at the Institut,
- Logging,
- Hydrogeology,
- Risks,
- Team management...

The pedagogical content of this project has been particularly carefully studied as it must be directed towards the real needs of employment.

The strength of the project is to develop directly on our site a drilling platform which will be a real training center for our students and for other people who would need to learn on such an infrastructure.

Conclusions

The department of geology of the Institut Polytechnique LaSalle Beauvais could develop an original project which could interest both the educational environment (and not only for the students of our school) and the energy domain by developing a new solution of energy resources for establishments located in a sedimentary basin like the Paris one. Now, our challenge is to find the good technical and financial partners...