**OPEN INNOVATION LAB - UDJG**

**Annex 4 – Challenge no. 21**

|  |
| --- |
| 1. **Name of the challenge** *(short, powerful and inspiring description):*  * ***Reducing energy consumption for a building by using natural ventilation*** |
| 1. **Context*:*** *(what is the background information behind the challenge, what is the state of the art of the sectors, the role of the organization in this context, the target group to whom the solution need to be addressed, etc.)*   To obtain indoor environmental quality and thermal comfort in buildings a energy intensive mechanical equipment is needed. When the climate conditions permit, natural ventilation could potentially help minimize the reliance on mechanically conditioned air; however, natural ventilation is rarely engineered.  Concern about global warming has resulted in a resurgence of interest in naturally ventilated buildings. |
| 1. **Problem:** (*what i*s *the problem that needs to be solved, why is important to solve, impact of this problem in the close future, impact of the problem on local or international area)*   Natural ventilation can be a good option for sites like detached one-family houses or holiday homes, but careful consideration of design and material is required to produce a feasible and functioning unit.  Increased awareness about the possibility of implementing solutions that uses natural ventilation leads to smart and simple options where mechanical ventilation is not required. |
| 1. **Additional info (for internal use):** *(what is expected to be delivered by the team (idea/concept/prototype), what are the specific tools & instruments that shall be used (e.g. Programing language etc.), what are the asset (as: knowledge, materials) will be given to the team.*   - The team should provide a solution concerning natural ventilation for an existing one-family house. |
| 1. **Skills of the team** (optional for the seeker, but useful for internal use)**:** *what specific skills shall the team have in order to address the challenge.*   - The team should possess skills in heat transfer, heating and fluid dynamics. |
| 1. **About the Seeker:**   **- Description of company/institution:**  Criomec SA is a large company involved in design, manufactures and installing cryogenic air separation systems, but in the last years it was involved in house building and, in the same time, in heating, ventilation, air conditioning in residential and non-residential building applications. That why the company wants to include in the architectural concept of the building the possibility to use natural ventilation.  The company is also involved in finding new solutions to reduce energy consumption and protect the environment |