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Notes for robotics component of Wolfhead Recovery project.

Robotics research and products have seen greatly accelerated growth over the last 20 years. So much so, it has made its way into high school and middle school after school programs with the main driver of these being FIRST Robotics. FIRST is an acronym of For Inspiration and Recognition of Science and Technology.

First Robotics is the largest robotics organization for secondary students with tens of thousands of students competing at multiple levels literally around the world. They hold their World Championships every spring and have in excess of 40,000 attendees every year over two venues. Minnesota alone has well over 400 robotics teams in their highest two levels of competition. But even with this high level of participation there is not a central training or practice arena for our Minnesota teams. Even on a national level, there is not a single entity offering a dedicated site.

By creating a dedicated facility with full scale practice fields, a plethora of robotics building equipment including 3D printers, expertise and training in robotics programming, mechanical theory and design, electrical engineering, and Computer Aided Design training, Wolfhead Recovery hopes to attract a wide audience from North America and Canada for participation in these programs.

The scope of the project goes well beyond providing a simple practice facility. We envision offering training and education programs in a summer camp like setting. We hope to attract local business expertise in the needed disciplines to offer real world applications and solutions using the robotics platform. If all goes well, we hope that this translates into a deeper understanding of what our area has to offer in terms of career paths which will eventually lead to job creation and growth through entrepreneurship and business start-ups.

To this end, we also plan to offer a high tech Maker Space utilizing the fabrication equipment, CAD lab, programming expertise and a wide and deep array of off the shelf parts for prototype fabrication. The main thrust of the Maker Space is to create an entrepreneurial environment in the hopes of spawning spin-off companies with the products that are created and as such further the economic development of the area.

We feel the robotics and maker space offerings go hand in hand and will have a synergistic effect on each other. Additionally we hope the robotics offerings will give exposure to the Maker Space opportunities and bring students back to the facility as they progress into their careers.



## **The International Robotics, Drone and 3D Printing Test Facilities.**

**Located in the Nation's most scenic and varied region of Minnesota's Iron Range with team booking available. Please refer to the on-line reservation form attached along with the per person cost schedule. Fees are payable by bank wire as per instructions prior to arrival and following our official confirmation.**

**The two facilities housing the activities has 400,253 square feet of floor space with child care, classrooms, computer, chemical, physics laboratories, cafeterias, 800 tiered dormitory beds for females and males on separate floors, workshops for robotics, three competition robotics arenas with portable seating for 2,400. Drone flight training and indoor and outdoor competition, cold climate flight control improvement, cold climate battery research and development, aluminum battery testing.**

**The 3D printing studio will handle metal, plastic and compound printing on a large scale to produce parts for innovative designs of robots and drones with drones designed to detect fire, stressed wild life, water pollution, boat and waterjet activities, floods and threats of pollution.**

**The MakerSpace is suited to support 23 or more activities according to popularity, community need and will incorporate the arts as well as STEM Learning using Experiential Learning practices and Creative Problem Solving techniques. Please see the listing of the MakerSpace activities proposed on the calendar provided for you information.**