

# Get Fit, Save Energy; Powering the RecPlex Through Energy-generating Equipment

Lauren Williams, Jessie Hanley, Pat Danko

Dr. Kelly Williams



## Introduction

At the University of Dayton, the RecPlex has no current "Green" technology that harvests kinetic energy from our bodies into electrical energy to power the building. However, there are ways to implement these ideas and create a new sustainable way to work out. By using information such as volume of students per week and quantity of equipment, the amount of money saved can be calculated. Not to mention the sheer joy of doing something to not only improve your bodies, but the world you live in.

## Other Options

Thin-Film Solar  
Water runoff system  
Solar Panels



## Alternative Options

### *PaveGen Floors*

Pavegen is a company that specializes in creating tiles that convert kinetic energy into electrical energy. When someone steps on a Pavegen tile, the energy created by stepping on the tile will be turned into energy that can power a wide variety of things. Pavegen worked with Nike to create a Pavegen-tiled basketball court for the 2007 Final Four. We propose to work with Pavegen on creating a basketball court filled with these tiles. This would indeed be expensive; however, with the frequent usage of the basketball courts, especially during intramural seasons, the Pavegen tiles could eventually pay for themselves.

### *ReRev Generators*

A company in Florida called [ReRev](#) makes generators which convert existing elliptical and bicycle machines into sources of power. Now when you hit the gym, you can burn off those calories while creating some renewable energy for a carbon negative workout.

With a ReRev system a 30 minute workout on an elliptical cross-trainer will generate around 50 Watts of power, which is enough to power a CFL bulb for 2.5 hrs, to charge a cell phone 6 times, to run a laptop for 1 hour, or a desktop for 30 minutes.

## Data

### *ReRev Generators*

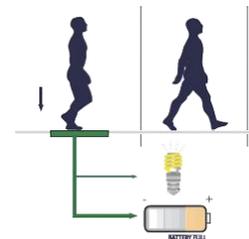
Assuming 10% of patrons use the stationary machines each year, 1,779 kwh would be generated. Average Monthly Electricity Usage (2010): 245,000 kwh \$13,000 for a generator on every stationary machine

### *PaveGen*

Basketball Court: 28,800 square ft  
\$2,640 per tile

## Conclusion

When we began our research on this topic we were expecting that these technologies would save tons of money. However, due to the high power usage of the RecPlex, the impact is not as large as we had hoped. Although this equipment is expensive and has a long payoff rate, we believe that the environmental and economical savings would be worthwhile.



**Sources:** Meinhold, Bridgette. "RevRev Makes Energy Generating Gyms a Reality | Inhabitat - Sustainable Design Innovation, Eco Architecture, Green Building." *Inhabitat*. 09 Feb. 2010. Web. 26 Feb. 2012. <http://inhabitat.com/revrev-makes-energy-generating-gyms-a-reality/>; [www.pavegen.com](http://www.pavegen.com)