As more people move to cities, it is becoming increasingly challenging to design infrastructures that efficiently support the many changing needs of its inhabitants. Urban areas are growing both in size and complexity. Over half the world’s population now live in an urban area, and 75% will call a city home by 2050. Simultaneously, data is being captured today at growing rates. Sensors are being embedded in many places: in cars, appliances, cameras, roads, pipelines, medicine and even live stock. Our world is becoming interconnected.
Big Data consists of datasets that grow so large that they become difficult to work with using on-hand database management tools. Difficulties include capture, storage, search, sharing, analytics, and visualizing.... “Working with larger datasets allow analyst to spot business trends, prevent diseases, combat crime”.
Arduino is an open-source electronics prototyping platform based on flexible, easy-to-use hardware and software. It’s intended for artists, designers, hobbyists, and anyone interested in creating interactive objects or environments.

Arduino can sense the environment by receiving input from a variety of sensors and can affect its surroundings by controlling lights, motors, and other actuators. The microcontroller on the board is programmed using the Arduino programming language (based on Wiring) and the Arduino development environment (based on Processing). Arduino projects can be stand-alone or they can communicate with software running on a computer (e.g. Flash, Processing, MaxMSP).

The boards can be built by hand or purchased preassembled; the software can be downloaded for free. The hardware reference designs (CAD files) are available under an open-source license, you are free to adapt them to your needs.
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Project Dasher is an Autodesk research project using a BIM-based platform to provide building owners with greater insight into real-time building performance throughout the life-cycle of the building.

Building Information Modelling (BIM) is an intelligent model-based process that provides insight for creating and managing building projects faster, more economically, and with less environmental impact. Using meter and sensor data, Project Dasher extends the value of BIM to the life-cycle of the building by integrating BIM data and building instrumentation to provide building owners with more insight into how existing buildings perform in real time.

A sustainable building is not a fixed ideal, but a moving target that must be reassessed on an ongoing basis in order to respond to the ever changing patterns of its occupants and its context. While building performance tools have traditionally focused on the simulation and evaluation of a specific design, we are witnessing a growing need for tools that can help us to continuously improve our strategies. In this context, we need a more integrative approach to maintain the complex balance between our energy-saving measures and occupant comfort. Using BIM as an ideal platform for managing complex building information, Project Dasher aims to go beyond existing building dashboards to represent a comprehensive framework for monitoring building performance. Project Dasher acts as a
Thank You