

# Standard Energy Efficiency Data Platform™



U.S. DEPARTMENT OF  
**ENERGY**

Energy Efficiency &  
Renewable Energy



## SEED PLATFORM™ 2.0

# Overview

## Building Energy Data Management Tool

- Web based platform
- Open source code
  - <https://github.com/seed-platform>
- Funded by U.S. Department of Energy
- Supported by
  - National Renewable Energy Laboratory (NREL)
  - Lawrence Berkeley National Laboratory (LBNL)
  - Third party software contributors



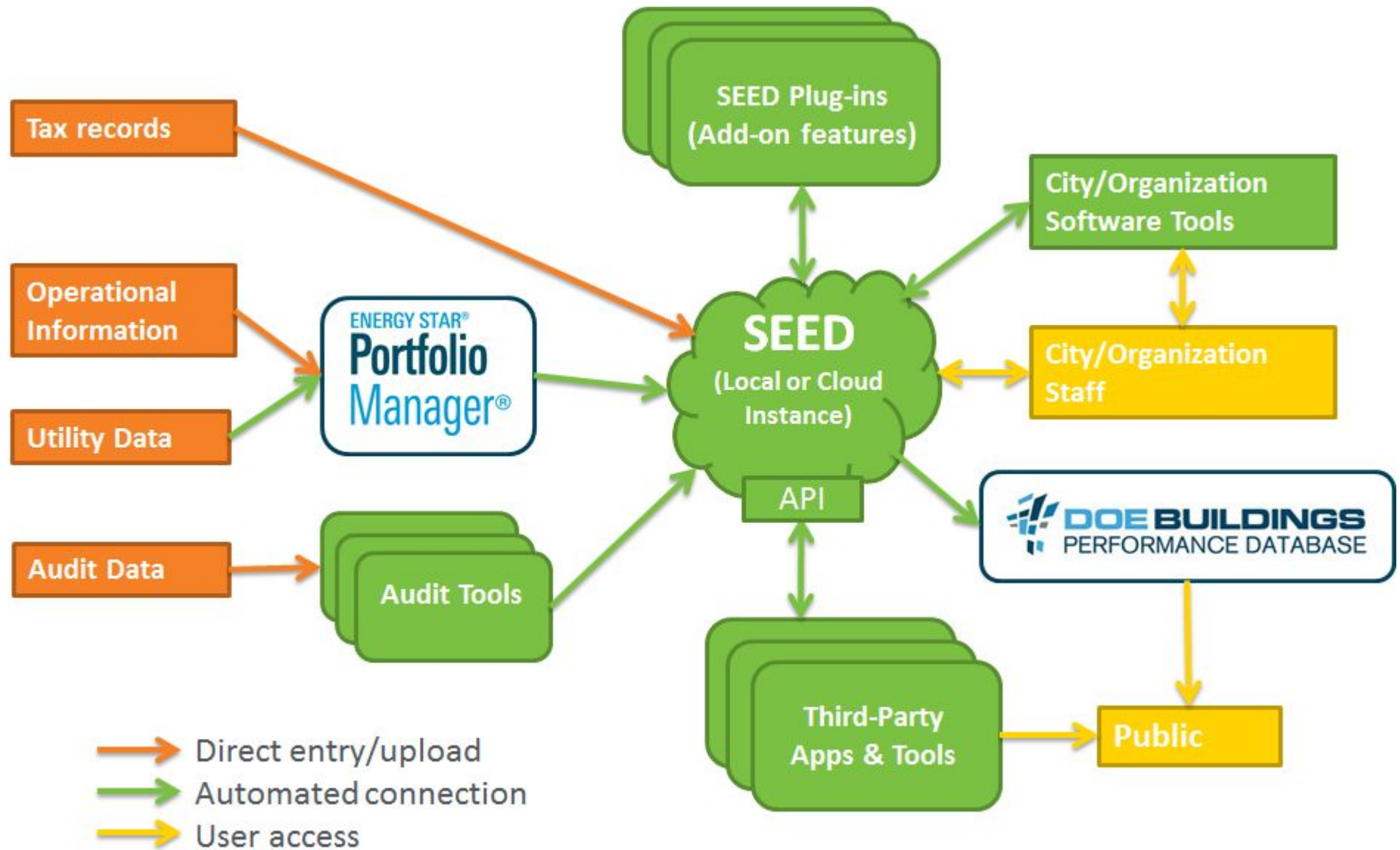
# Overview

## Getting Started with SEED

- Support Website
  - <https://seed-platform.org/>
- Web based platform
  - Stand up your own instance (AWS or internal servers)
    - Developer documentation  
[https://seed-platform.org/developer\\_resources/](https://seed-platform.org/developer_resources/)
  - Use a web hosting service
    - [https://seed-platform.org/technical\\_ally/](https://seed-platform.org/technical_ally/)
  - Test account through LBNL
- User documentation
  - <https://seed-platform.org/documentation/>
  - [https://seed-platform.org/getting\\_started/](https://seed-platform.org/getting_started/)



# Data Management



# Data Management

## Collect Data from different sources and merge them together

- Files
  - “flat” (CSV, Excel) -- one record per building
  - XML options for data to attach to the building -- GreenButton, BuildingSync, HPXML
- There is no restriction on number of fields or field types
- At least ONE field must be common between the data files to match the records (Address, Tax Lot ID, Building ID).
- This makes it possible to import data files with very different data, and connect them together
- Data is imported and matched based on a user-defined time period
- Once the data files have been matched together, it is possible to query the results for various uses.

# Data Management

## SEED has the following features after data is imported and matched

- **Data Quality Checking**
  - User defined checks for field ranges
  - Check at time of mapping and later on final inventory
  - Automatically adds labels to problem data (as defined by user)
- **Filtering**
  - Essentially querying the data
  - Can filter on labels
- **Labels**
  - Can add labels to records for categorizing
- **API** (Application Programming Interface) **Connections for other applications**

# Primary Current Use Case

## Energy Benchmarking

- Commercial Buildings (primarily)
- Residential Buildings (as long as the data is “flat”)

## Used by Jurisdictions with Benchmarking Req'ts to produce:

- **Annual Benchmarking Disclosure Report**
  - Building or Tax Lot status relative to Benchmarking req't
- **List of Violations**
  - Buildings or Tax lots that did not comply with req't
- **Annual Report of Building Stock Performance**
  - Analysis of building stock energy consumption by any characteristic represented in the merged data (floor area, sector, age)

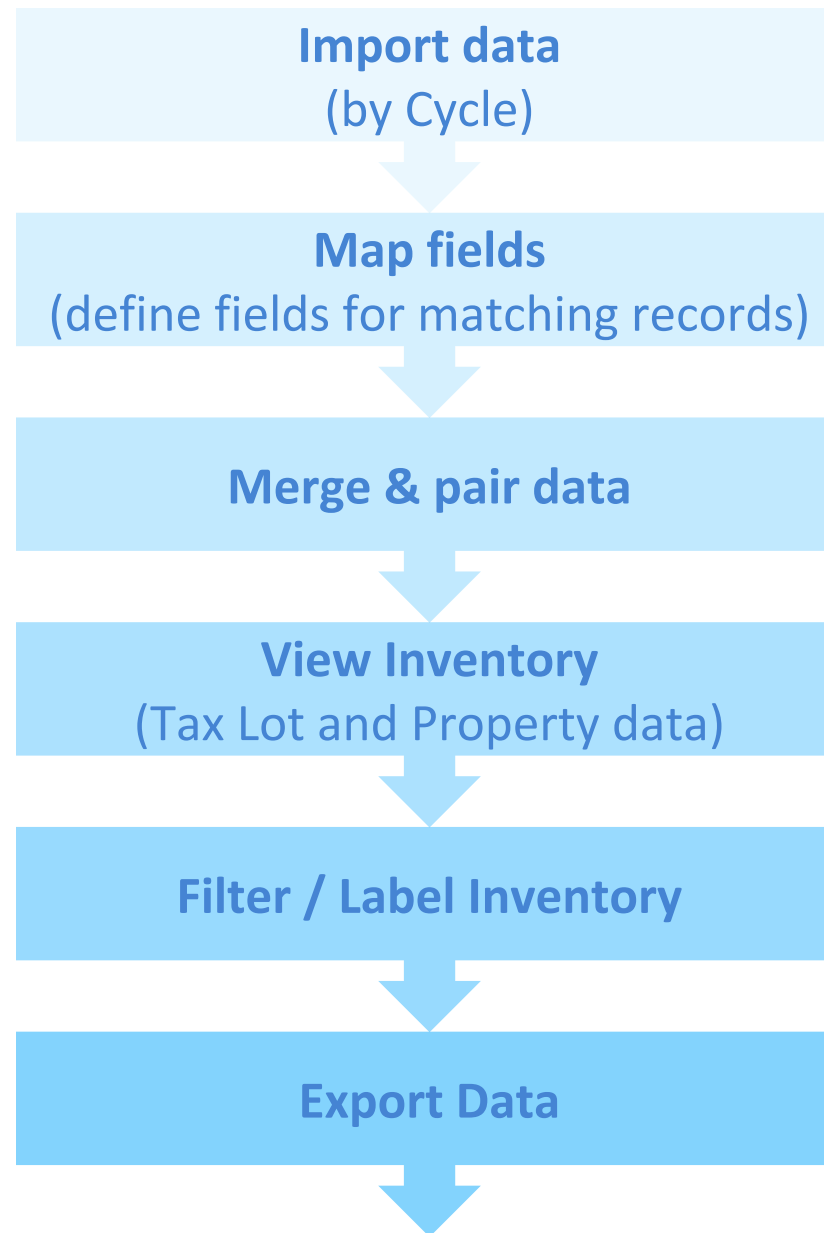
# Data Management

## Benchmarking Workflow

- **Import data from different sources**
  - Building / Property List
    - Tax assessor lists
    - Costar Data
  - Benchmarking data
    - Portfolio Manager Data
- **Match data from different sources**
  - There must be at least one common field to match on
- **Handle data with different types of relationships**
  - Tax Assessor data defined by Lot/Parcel
  - vs
  - CoStar or Portfolio Manager data defined by buildings
- **Maintain data based on compliance year**



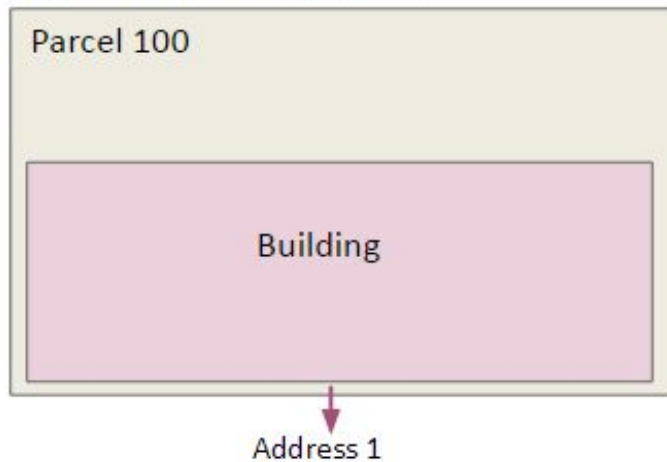
# SEED Workflow



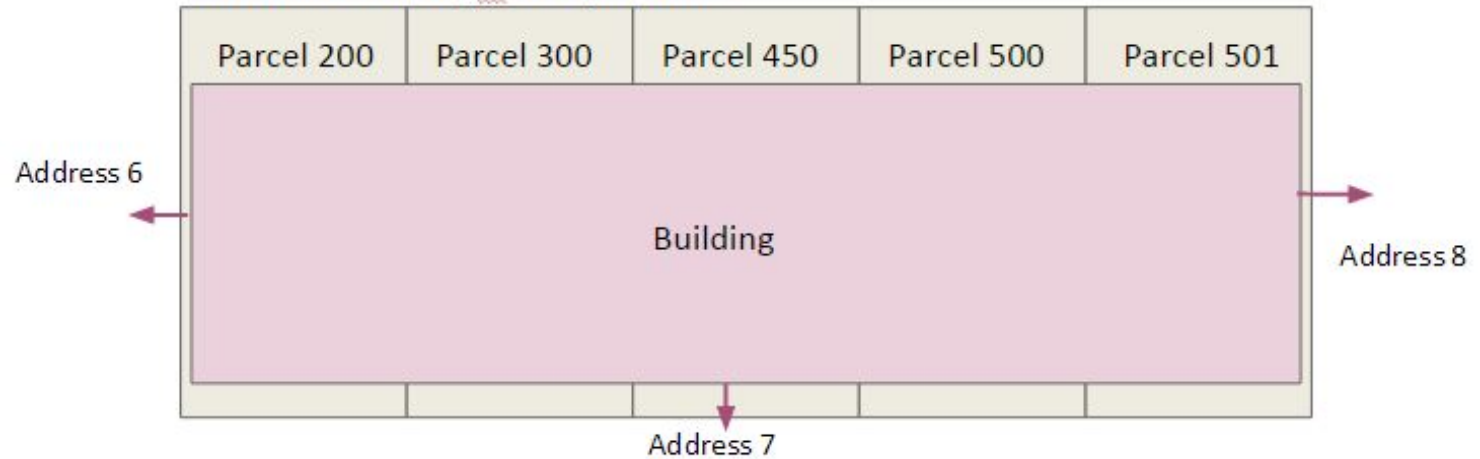
# Physical reality of the data

The relationship of Buildings to Parcels/Tax Lots can be complicated

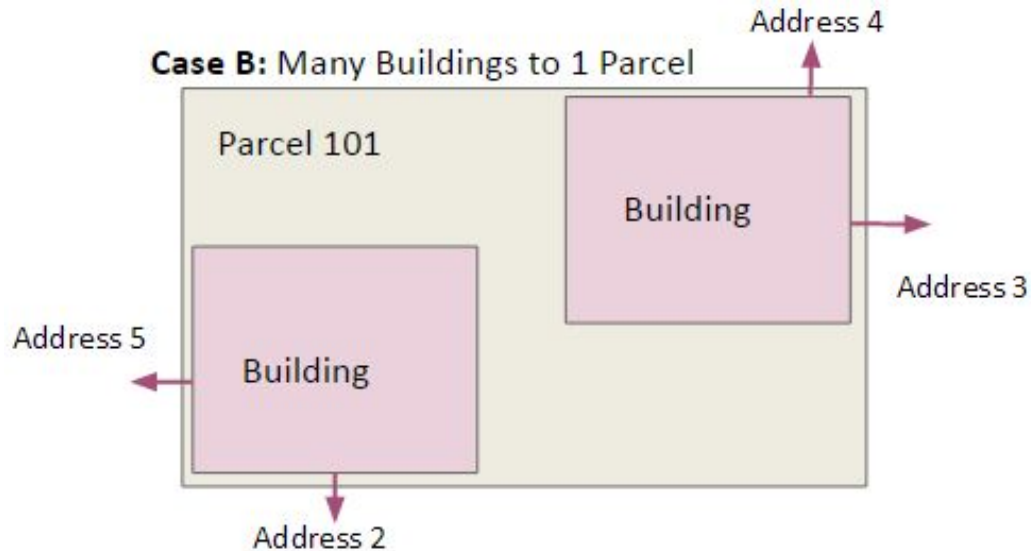
**Case A: 1 Building to 1 Parcel**



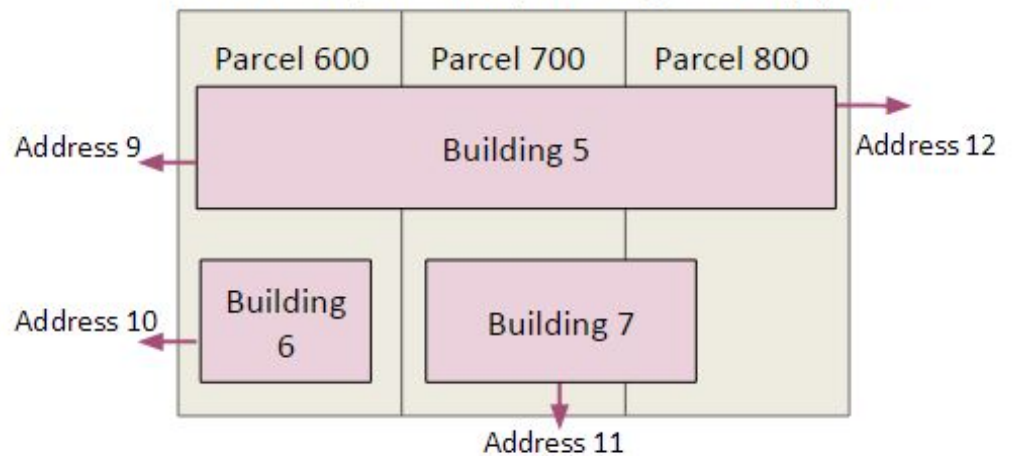
**Case C: 1 Building to many Parcels**



**Case B: Many Buildings to 1 Parcel**

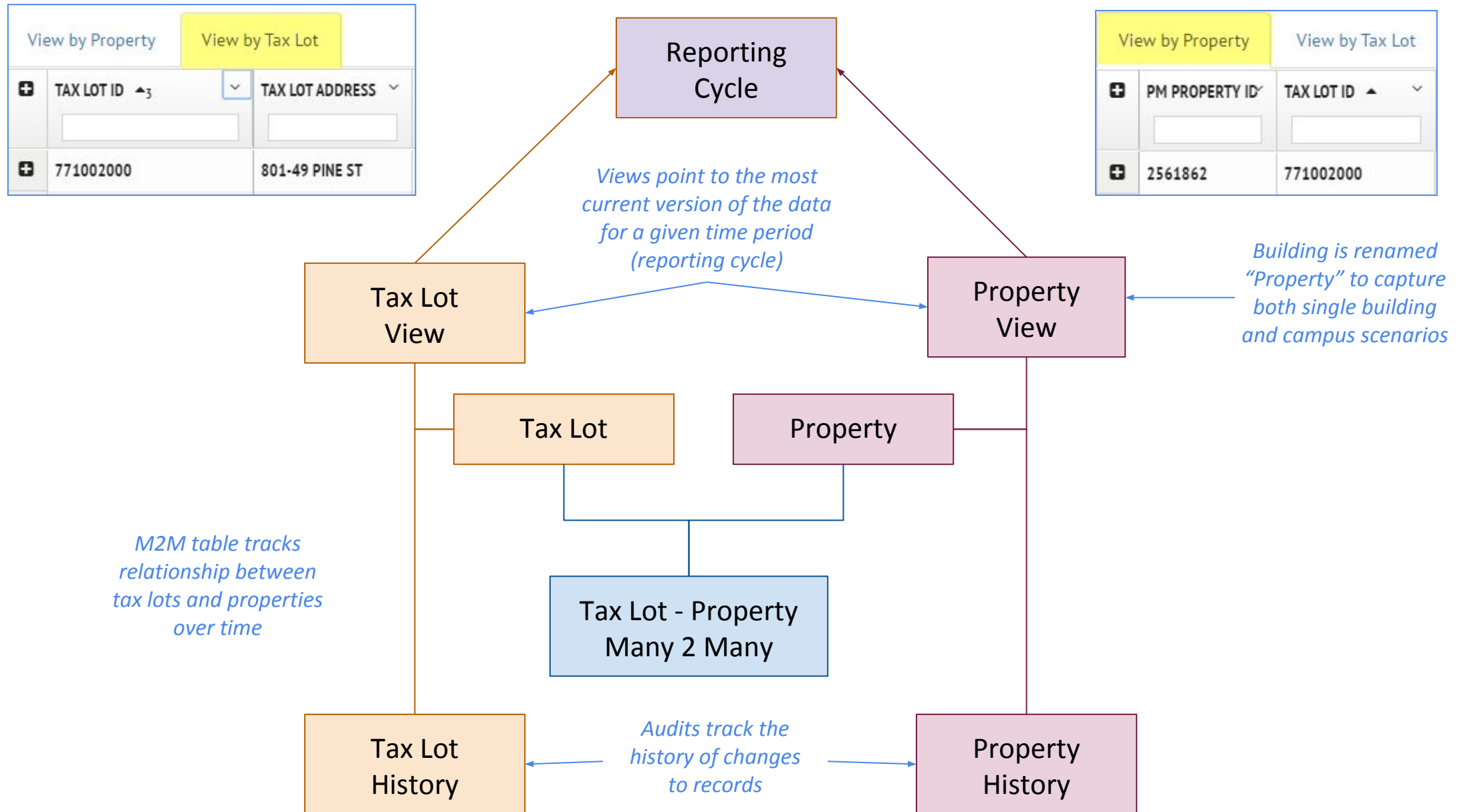


**Case D: Campus -- many buildings to many parcels**

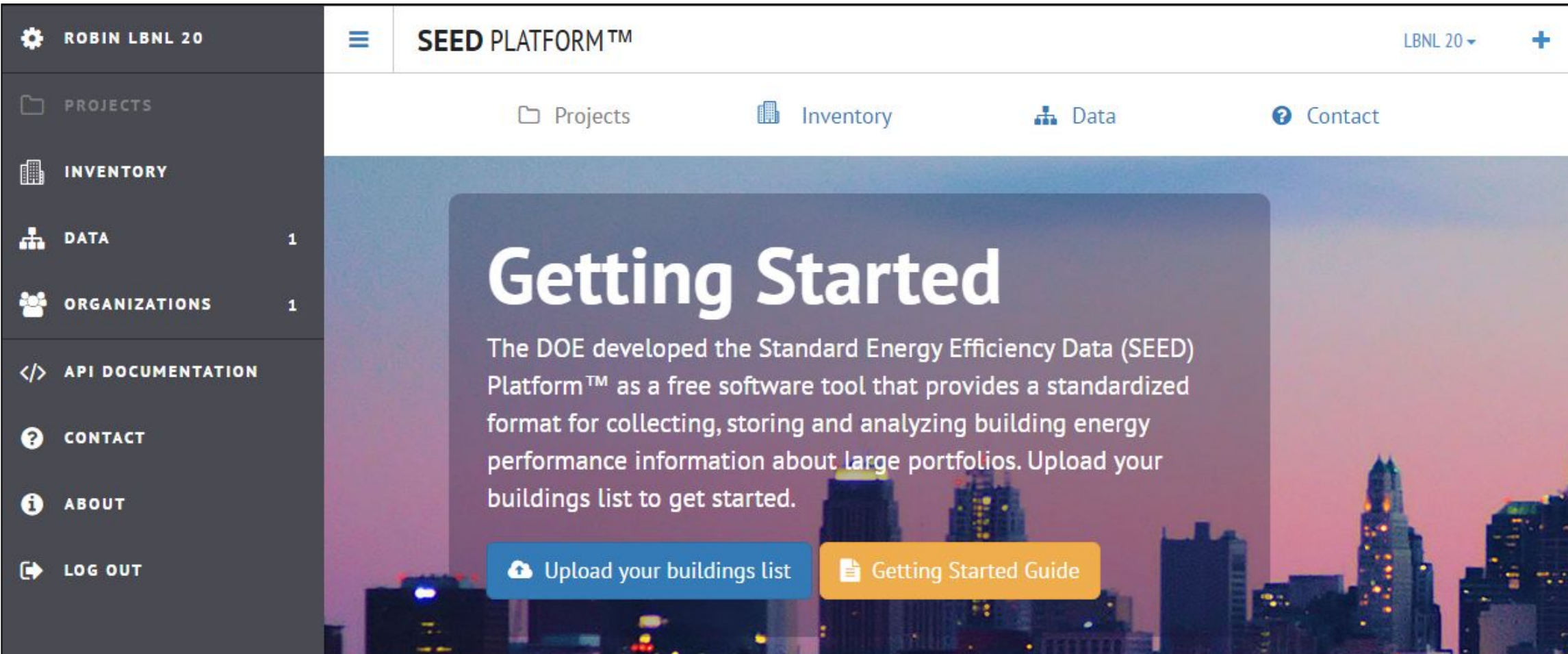


# Data Model Schematic

- View different states in time
- Many to many relationship between Tax Lot data and Building/Portfolio Manager data
- Viewing Tax Lot and Property data combined / rolled up



# Home Page



**ROBIN LBNL 20**

**SEED PLATFORM™** LBNL 20 +

Projects Inventory Data Contact

## Getting Started

The DOE developed the Standard Energy Efficiency Data (SEED) Platform™ as a free software tool that provides a standardized format for collecting, storing and analyzing building energy performance information about large portfolios. Upload your buildings list to get started.

[Upload your buildings list](#) [Getting Started Guide](#)