# Development plan of Building performance intelligent design

## Abbreviation

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| Name |  |  |
| BPID | Building performance information data file | BPD-AI file type |
| IDF |  | EnergyPlus input file type |

## Introduction

BPD-AI includes modules to facility green building consultants designing high performance buildings.

## Main goals

## Phase 1 - Obtain data from idf file

### Goals

* Convert idf to building performance information data file, BPID and vice verse.
* Build 3D building geometry for energy simulation automatically

### From IDF to BPID

1. Parse idf file by pattern matching (regular expression).使用正则表达式解析idf文件
2. Obtain data from idf file. 从idf中获取信息，存入BPID文件中。

### Generate 3D building geometry from plan files (dwg, jpg, png, pdf, etc.)

1. Recognize major components in the plan files, such as walls, windows, room function, air conditioning type. 识别平面图中的关键内容，例如墙体、窗户、房间类型和空调系统类型。
2. Store building geometry information into structured-data such as array. 将建筑的几何信息存储到结构化的数据中，例如array。
3. Build 3D geometry for energy simulation including information about thermal zone. 建立用于能耗模拟的三维模型，其中包含有热区信息。