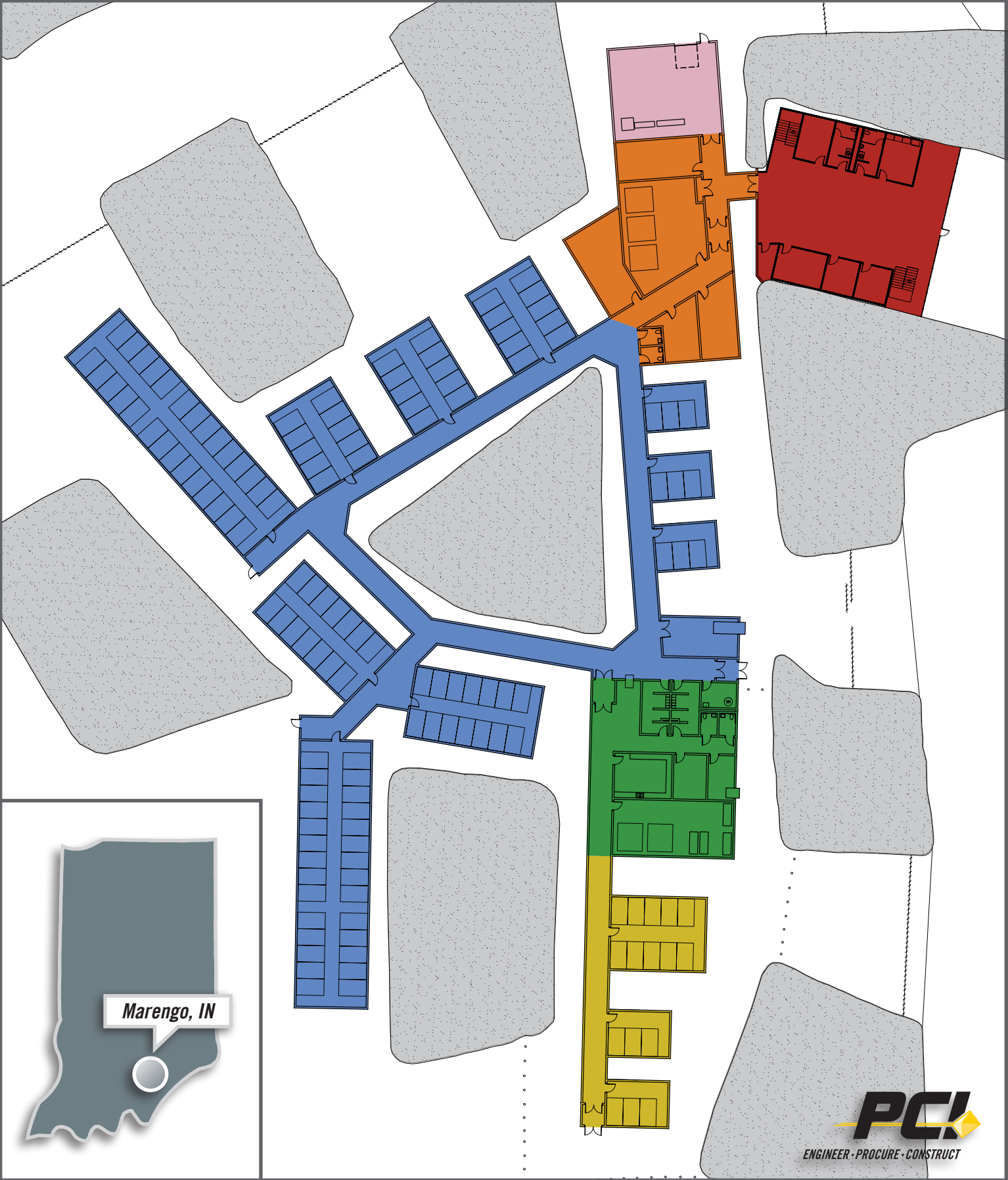


**BIOMEDICAL CROP RESEARCH CENTER**



# BIOMEDICAL CROP RESEARCH CENTER

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## Office and Administrative Area

The main entrance to the Biomedical Crop Research Center is through the office and administrative area. A reception area and security system limits access to the facility to authorized personnel and visitors. This 7,310 square foot space provides offices for the employees and researchers and includes equipment to remotely monitor the contained areas of the facility. The office area includes space on two levels within the existing mine walls with comfortable open areas for study and collaboration, as well as private conference rooms, restrooms, break room and security offices. Security cameras and sensors for the entire facility are monitored continuously. A secured corridor connects the office area to the contained areas of the facility.

## Receiving Area

Materials and supplies are delivered through a secured gate and are unloaded at a loading dock leading into the 1,270 square foot receiving area. All equipment, soil, specimens and other necessary materials pass through a processing area where they are inspected and decontaminated if necessary. This area also includes an automated precision needle seeder for use on "scale-up" type research projects. The receiving area is directly connected to the contained research areas and growing rooms by an 8-foot wide corridor.

## Bio-Safety Level 2 (BL2-P) Research Area

Secured access to this 3,852 square foot research area is from the office. This area is adjacent to the receiving area and includes headhouse preparatory space, laboratories, growth chambers, incubators, tissue chambers, and inoculation chambers. A decontamination area is provided for researchers to remove protective clothing before leaving the contained research area.

## Bio-Safety Level 2 (BL2-P) Growth Rooms

The BL2-P growth rooms are connected to the BL2-P research area with an 8-foot wide corridor. The BL2-P contained growth room sizes are as follows:

- 2 rooms with 352 square feet of growing space and 16 foot high clearance
- 1 room with 352 square feet of growing space and 22 foot high clearance
- 2 rooms with 866 square feet of growing space and 16 foot high clearance
- 1 room with 866 square feet of growing space and 22 foot high clearance
- 1 rooms with 1,165 square feet of growing space and 16 foot high clearance
- 1 room with 1,165 square feet of growing space and 22 foot high clearance
- 2 rooms with 2,435 square feet of growing space and 22 foot high clearance

For containment and security, the growth rooms are constructed with reinforced concrete block walls, and reinforced concrete roofs. Each room has sealed concrete floors, floor trench drains, and rolling ebb and flood growing benches. Temperature, light levels, humidity, CO<sub>2</sub>, and ventilation can be customized for each room independent from the other rooms. Irrigation water and RO water is available. The two 2,435 square foot growth rooms have overhead water boom irrigation systems. An autoclave is provided to devitalize the plants and other material before being discarded.

## Bio-Safety Level 3 (BL3-P) Research Area

Access to this secured, 3,438 square foot research area is from the BL2-P research area. At the entrance to this area are "shower-in, shower-out" decontamination rooms with lockers, showers, sinks, and space for storing clean and soiled linens. This area includes headhouse preparatory space, laboratories, growth chambers, incubators, tissue chambers, and inoculation chambers.

This contained research area is designed to be under negative pressure to isolate air in this space from air in the other parts of the facility. Ultra-HEPA filtration is used to remove particulate contamination from the air before being exhausted. All drains in this area are piped to a sump for decontamination before being released.

## Bio-Safety Level 3 (BL3-P) Growth Rooms

The BL3-P growth rooms are connected to the BL3-P research area with an 8-foot wide corridor. The BL3-P contained growth room sizes are as follows:

- 2 rooms with 352 square feet of growing space and 16 foot high clearance
- 1 room with 866 square feet of growing space and 16 foot high clearance

For containment and security, the growth rooms are constructed with reinforced concrete block walls, and reinforced concrete roofs. Each room has sealed concrete floors, floor trench drains, and rolling ebb and flood growing benches. Temperature, light levels, humidity, CO<sub>2</sub>, and ventilation can be customized for each room independent from the other rooms. Irrigation water and RO water is available. An autoclave is provided to devitalize plants and other materials before being discarded.