East Campus Concept Plan
Municipal Concept Review: Jan 9, 2020

2026 Campus Plan Principles

1. Provide an integrated environment for teaching, living, learning and research
2. Enhance the campus’s distinctive sense of place
3. Foster a setting that is welcoming and supportive and encourages positive interaction and exchange
4. Create a climate that encourages thoughtful and creative approaches to sustainability
5. Serve communities that extend beyond the campus
Existing Condition
Athletics Operations
Existing Facility on Lot 21
What Is TIGER?
Moving Toward Carbon Neutrality

Anticipated CO2e Reduction Strategies

2026 Target
Reduce campus greenhouse gas emissions to 73,000 metric tons CO2e irrespective of growth and without the purchase of market offsets.

2046 Target
Net zero campus greenhouse gas emissions per year.
Princeton University is advancing the use of geo-exchange technology to enable the phase-out of nonrenewable energy sources, including natural gas used today to produce steam heat. **TIGER (Thermally Integrated Geo-Exchange Resource)** is the first step in this process.

**TIGER will:**
+ Be fully connected to a campus network providing hot and chilled water to all buildings
+ Connect to a network of Geoexchange bores
+ Include heat recovery systems and thermal storage
+ Serve and signal Princeton’s commitment to sustainability

**TIGER will not:**
- Use geothermal energy
- Operate as a “power plant”
- Utilize fossil fuels
Moving Toward Carbon Neutrality
Geoexchange Borefields under Construction

**715 (+/-) geoexchange bores**
to be installed in the near term to support the TIGER facility and the campus goals of Carbon Neutrality

Bores will be located under the new parking garage, the new soccer stadium, as well as under the TIGER/Athletics Operations Facility.
The TIGER building will house heat pump equipment and related systems. A heat pump is a system used to move heat from one system to another and has proved to be one of the most efficient ways to provide heating and cooling to Princeton’s buildings. To further improve sustainability, two thermal energy storage (TES) tanks will be installed on site to store water produced to heat and cool campus.
East Campus Overview
CHILLER ROOM
ELECTRICAL ROOM
TEMPERED PARKING
EXTERIOR UNCONDITIONED PARKING

Space Types
TIGER SHARED SPACES
ATHLETIC OPS. CONDITIONED EQUIPMENT SPACES
UNCONDITIONED GARAGE

DWG. NO.
DATE
JOB NO.
24601.01
RPRE-15-

COLORED PUBLICATION UNIVERSITY - EAST CAMPUSES

1“ = 30’-0”

Exterior Unconditioned Vehicle Storage
Tempered Vehicle Storage
Athletics Operations
Shared Spaces
TIGER
Chiller Room
Electrical Room
Ground Level

LEVEL G
1" = 30'-0"
Circulation
TIGER & Athletics Operations Access

- Pedestrian Access
- Vehicular Access
Lighting
**Site Lighting**

Foot Candles

**Illuminance**
(calculated at groundplane)

- Less than 0.25 fc
- Between 0.25 and 1 fc
- Between 1 and 3 fc
Landscape
### Planting Plan

<table>
<thead>
<tr>
<th>Project</th>
<th>Tree Removal above 8” cal</th>
<th>Tree Replacement Requirement</th>
<th>Proposed Trees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tiger Application</td>
<td>90</td>
<td>118</td>
<td>119</td>
</tr>
<tr>
<td>Total (Includes Soccer &amp; Garage applications)</td>
<td>253</td>
<td>330</td>
<td>438</td>
</tr>
</tbody>
</table>

- **Existing Trees**
- **Proposed Trees**
- **Stormwater Mix**
- **Shrub & Groundcover**
- **Application Limit of Work**
Stormwater Management
Sound Levels
TIGER Sound Levels

Existing Site Ambient Noise Levels (no activity, 12:30 - 4:30pm): **45-50 dBA**

Existing Site Ambient Noise Levels (Nighttime Levels, 7:00 - 7:30pm): **40-45 dBA**

Existing Site Ambient Noise Levels (discrete events - i.e. cars): **60-65 dBA**

New Jersey Noise Code:
7:00am - 10:00pm: **max 65 dBA**
10:00pm - 7:00am: **max 50 dBA**

Predicted Noise Levels from TIGER (all equipment running):

Location 1: **50-55 dBA**
Location 2: **45-50 dBA**
Location 3: **45-50 dBA**
Location 4: **40-45 dBA**
Location 5: **25-30 dBA**

In areas where mechanical equipment noise is below ambient noise, ambient noise levels will dominate in this location (Location 5).
Sound Levels - Day One

**Green Values:** Ambient Sound Levels

**Orange Values:** Ambient Sound Levels - Nighttime

**Blue Values:** Predicted Sound Levels from all Equipment Operating Simultaneously
Sound Levels - Future

- Green Values: Ambient Sound Levels
- Orange Values: Ambient Sound Levels - Nighttime
- Blue Values: Predicted Sound Levels from all Equipment Operating Simultaneously
Renderings
Example of Glass Doors
TES Tanks Material
Existing Conditions
Intersection of Broadmead & Faculty Road