BB&N’s mission is to promote scholarship, integrity, and kindness in diverse, curious, and motivated students. The school prepares students for lives of principled engagement in their communities and the world.
Agenda & Introductions

Welcome

Project Background

Site History

New Athletic Complex Project

Discussion
PROJECT BACKGROUND
PROJECT BACKGROUND
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PROJECT BACKGROUND
MEMORANDUM OF UNDERSTANDING
BB&N AND THE TOWN OF WATERTOWN

• Each party will maintain their own facility at their cost
• Watertown will use BB&N’s fields during evenings, Saturday (when BB&N is not playing) and Sundays
• Watertown will have scheduling rights in the summer
• Watertown may need to use Filippello during construction of its school buildings
• BB&N will use Filippello fields immediately after school
• BB&N will have full-day access in late August and over March break (pre-season for field sports)
• Watertown has access to the fieldhouse when complete
SITE HISTORY
TODAY

(please note change in orientation)
SITE HISTORY
TODAY
SITE HISTORY

1940s
SITE HISTORY
1995
SITE HISTORY
2001
SITE HISTORY
2008
SITE HISTORY

2013
SITE HISTORY
2021
NEW ATHLETIC COMPLEX PROJECT
NEW ATHLETIC COMPLEX PROJECT

Project Elements

Athletic Fields

Future Building

Parking, Access, and Landscape

Spectator Viewing

Storage

Site & Athletic Lighting
NEW ATHLETIC COMPLEX PROJECT

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Recent projects with similar systems using traditional SBR rubber:
- Amherst College
- Boston College
- Dartmouth College
- Harvard Jordan Field
- MIT
- UMass Amherst

Towns of Carver, Dedham, Lexington, Scituate, Weston, and Weymouth (among many others!)

Institutions with similar systems using encapsulated rubber:
- BB&N’s Franke Field
- Boston College’s Alumni Field
- Colby College’s Bill Alfond Field
- Dexter Southfield’s Main Field
- Harvard Stadium Field

(this is a small representation of projects)
NEW ATHLETIC COMPLEX PROJECT

Project Elements

Athletic Fields

Surface Considerations
- Surface Playability
- Surface Usage
- Water Conservation
- Stormwater Benefits

Concerns Raised Regarding Turf
- Heavy Metals and PAHs
- MRSA (aka Staph)
- Heat
- PFAS

“...these findings support the premise that while many chemicals are present in the recycled tire crumb rubber, exposure may be limited based on what is released into air or biological fluids.” - EPA’s Final Report Part 1 – Tire Crumb Rubber Characterization Volume 1, dated July 25, 2019.

“Consequently, overall building design cooling loads near Artificial Turf (AT) decrease by 15%-20%. In addition, the irrigation water conservation with AT causes an embodied energy savings of 10 W h m⁻² day⁻¹. Locally, this study points to a win–win situation for AT use for urban landscaping as it results in water and energy conservation.” - Yaghoobian N, Kleissl J, Krayenhoff E. Modeling the Thermal Effects of Artificial Turf on the Urban Environment. Journal of Applied Meteorology and Climatology 49: 2010.

“...the safety of our field users is paramount to BB&N’s mission and values. Through research and experience we’ve determined that synthetic turf is the right choice for the New Athletic Complex field surfaces” - Dr. Jennifer Price, Head of School

KEY TERMS
BIOAVAILABILITY & EXPOSURE

Institutions with similar systems using encapsulated rubber
BB&N’s Franke Field
Boston College’s Alumni Field
Colby College’s Bill Alfond Field
Dexter Southfield’s Main Field
Harvard Stadium Field
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CAMPUS RAISES THE BAR ON SUSTAINABLE LAND DEVELOPMENT

COLBY COLLEGE ATHLETIC FIELDS

Waterville, Maine | Project Size: 30 acres | Certification: SITES Certified

WATER

Basins beneath the fields were implemented to slow and clean runoff. An irrigation system was incorporated to conserve water by automatically adjusting to precipitation and evaporation rates with the use of rain and soil sensors.

PLANTS

The college engages biology students to identify and remove invasive plant species from defined vegetation and soil protection zones. This is an ongoing initiative to protect native plant communities and support wildlife habitats.

SOIL

All of the topsoil from the pre-existing playing fields was reused onsite. This helped minimize the need to import materials from offsite.

MATERIALS

Sixty-one percent of the total materials costs included materials and products that were manufactured and extracted locally, helping to minimize the total distance traveled to bring materials onsite.

HUMAN HEALTH AND WELLBEING

Students and the larger community are connected to nature through varsity sports, intramurals, and health and wellness classes. The site has plenty of seating and viewing space to encourage groups to come to the fields and spend time enjoying the games. In addition, the fields were constructed on a slope to provide unobstructed views of the surrounding nature, making a quiet place for visitors to relax and recharge while watching the game or just visiting the site.

Institutions with similar systems using encapsulated rubber

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Shown to help understand limited spill and glare of lighting system
DISCUSSION
Discussion
THANK YOU & GOODNIGHT
UTILITY PLAN
L3.1
JJC
1"=30'-0"
21003-L3.1-UT_PLAN.dwg

NOT FOR CONSTRUCTION

UTILITY NOTES


2. PRIOR TO THE START OF ANY EXCAVATION FOR THE PROJECT, BOTH ON AND OFF THE SITE, THE CONTRACTOR SHALL NOTIFY DIGSAFE AND BE PROVIDED WITH A DIGSAFE EQUIPMENT ENCLOSURE; EQUIPMENT TO BE DETERMINED BY THE CONTRACTOR. DIGSAFE AND OR THE OTHER RESPECTIVE UTILITY COMPANIES SHALL BE CONTACTED 72 BUSINESS HOURS IN ADVANCE OF CONSTRUCTION OPERATIONS. PHONE DIGSAFE 1-888-344-7233.

3. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO DETERMINE THE EXACT LOCATION OF ALL OTHER UTILITIES OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ALL UNDERGROUND UTILITIES.

4. IF NEEDED, EXTEND AND TIE INTO EXISTING MANHOLE
5. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE OWNER'S REPRESENTATIVE FOR RESOLUTION OF THE CONFLICT.
6. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF ALL GAS, ELECTRIC, TELEPHONE AND OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
7. CONTRACTOR SHALL MAINTAIN, OR ADJUST TO NEW FINISH GRADE, AS NECESSARY OR DIRECTED, ALL UNDERGROUND UTILITY AND SITE SYSTEMS, UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEERING GROUP, LOCATED AT 150 LONGWATER DRIVE, SUITE 101, NORWELL, MA, AND DATED DECEMBER 3, 2020 AND REVISED ON JANUARY 8, 2020.
8. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION.
9. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF ALL GAS, ELECTRIC, TELEPHONE, AND ANY OTHER PRIVATE UTILITIES OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ALL UNDERGROUND UTILITIES.
10. PROTECT AND MAINTAIN EXISTING ON-SITE DRAINAGE STRUCTURES AND PIPES UNLESS OTHERWISE NOTED.
11. BITUMINOUS CONCRETE ELEVATIONS AT CATCH BASINS TO BE 10'.

UTILITY LEGEND
HDPE PERFORATED LATERAL PIPE, TYPICAL
PERFORATED COLLECTOR DRAIN
PERFORATED COLLECTOR DRAIN
PERFORATED LATERAL DRAIN
HDPE PERFORATED DRAIN LINE
CATCH BASIN
STORMCEPTOR
WATER GATE
WATER LINE
SEWER LINE
STORM DRAIN LINE
DRAIN / SEWER MANHOLES
ELECTRICAL DISTRIBUTION CONDUIT ROUTES TO SITE
FLARED END SECTION
WATER CONNECTION TAPPING SLEEVE FOR AND METER
BACKFLOW PREVENTOR
Duct bank to be coordinated with Wrong Cover
MCPHAIL ASSOCIATES
GEOTECHNICAL ENGINEER - CHECKED:
FILE:
SCALE:
SHEET NO:
SHEET TITLE:
PROJECT NO:
DATE: March 4, 2021
FIELD WEAR INDEX HANDOUT

<table>
<thead>
<tr>
<th>Activity Multipliers</th>
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</thead>
<tbody>
<tr>
<td>Activity</td>
</tr>
<tr>
<td>Walking and/or Standing on a field.</td>
</tr>
<tr>
<td>Baseball and/or Softball</td>
</tr>
<tr>
<td>Parked Cars</td>
</tr>
<tr>
<td>Sport Camp: Baseball/Softball</td>
</tr>
<tr>
<td>Marching Band Practice</td>
</tr>
<tr>
<td>Soccer/w/cleats</td>
</tr>
<tr>
<td>Field Hockey</td>
</tr>
<tr>
<td>Football w/cleats</td>
</tr>
<tr>
<td>Lacrosse &amp; Team Practice</td>
</tr>
<tr>
<td>Rugby</td>
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<tr>
<td>Soccer w/cleats &amp; Team Practices</td>
</tr>
<tr>
<td>Sport Camp: Lacrosse</td>
</tr>
<tr>
<td>Tournaments</td>
</tr>
<tr>
<td>Ultimate Frisbee</td>
</tr>
<tr>
<td>Football w/cleats</td>
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<tr>
<td>Sport Camp: Soccer</td>
</tr>
<tr>
<td>Sport Camp: Football</td>
</tr>
<tr>
<td>Football Team Practice</td>
</tr>
<tr>
<td>Activity before/after Turf Dormancy</td>
</tr>
<tr>
<td>Activity during/after Rain</td>
</tr>
</tbody>
</table>

TURF SPECIES MULTIPLIER

<table>
<thead>
<tr>
<th>Species</th>
<th>Multiplier</th>
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<tbody>
<tr>
<td>Kentucky Bluegrass</td>
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</tr>
<tr>
<td>Perennial Rye Grass</td>
<td>1.25</td>
</tr>
<tr>
<td>Bermuda Grass</td>
<td>1.5</td>
</tr>
</tbody>
</table>

ACTIVITY RATING

- Level 1 – Light Maintenance: Below 250 hrs. AWIV
  - Two or less Hollow Core Aerations a year.
  - Two or less Deep Tine Aerations a year.
- Level 2 – Light to Medium Maintenance: 251 - 300 hrs. AWIV
  - Between two and four Hollow Core Aerations a year.
  - One or less Deep Tine Aerations a year.
  - One or less Deep Hollow Tine Aerations a year.
- Level 3 – Medium Maintenance: 301 - 350 hrs. AWIV
  - Hollow Core Aeration once a month.
  - Two or less Deep Tine Aerations a year.
  - One or less Deep Hollow Tine Aerations a year.
  - One or less Top-dressing a year.
  - One or less Over-seeding a year.
- Level 4 – Medium to Heavy Maintenance: 351 - 400 hrs. AWIV
  - Hollow Core Aeration once a month.
  - Two or less Deep Tine Aerations a year.
  - Two or less Deep Hollow Tine Aerations a year.
  - Two or less Top-dressings a year.
  - Two or less Over-seeding a year.
- Level 5 – Heavy Maintenance: 401 - 450 hrs. AWIV
  - Hollow Core Aeration once a month.
  - Two or more Deep Tine Aerations a year.
  - One or more Deep Hollow Tine Aerations a year.
  - Two or more Top-dressings a year.
  - Two or more Over-seeding a year.
  - Renovation, having to do field repairs by plugging.
- Level 6 – Renovation: Over 451 hrs. AWIV
  - Hollow Core Aeration once a month.
  - Two or more Deep Tine Aerations a year.
  - Two or more Deep Hollow Tine Aerations a year.
  - Two or more Top-dressings a year.
  - Two or more Over-seeding a year.
  - Renovation, having to do field repairs by Sodding and Plugging.

Presented By: David Schlotthauer at STMA Convention 2008 in Phoenix, AZ
For further information contact me at dbs4@byu.edu