The University of Delaware’s Science, Technology and Advanced Research (STAR) Campus has the unique opportunity to be a center of innovation, leading cutting-edge research in areas such as health science, cyber security, engineering and alternative energy. STAR’s direct proximity to Delaware’s flagship university allows the research campus to maximize UD’s unique resources and partnerships with government agencies and private businesses. In addition to providing priceless educational and professional opportunities for students, STAR campus will ignite job and economic growth in Delaware for years to come.
HISTORY

Delaware, the University of Delaware and STAR Campus site in particular, are steeped in history. From the formation of a school in 1743 emerged Newark College, one of a select number of land grant colleges, and eventually became the University of Delaware. Its former students include signatories to the Declaration of Independence and the U.S. Constitution, as well as U.S. Senators and the current Vice President of the United States.

Delaware is also home to the Delaware Court of Chancery, which since its founding in 1792 has been the preeminent jurisdiction for fiduciary adjudication of the law. As a result, many financial institutions and corporations have established a presence in Delaware.

STAR Campus site has a rich history in its own right. In the early 1950’s, Chrysler established an assembly plant that would produce well over 1,000 Patton 48 tanks. Later that decade, Chrysler would shift production to vehicles including the Dodge Dart, Durango and Intrepid, and the Chrysler LeBaron and Concorde, among others. Several million vehicles were produced at the Chrysler Assembly Plant, employing over two thousand people at the height of production in 2007.

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1694</td>
<td>Newark is founded by Scottish, Irish and Welsh settlers</td>
</tr>
<tr>
<td>1743</td>
<td>Rev. Dr. Francis Alison opens school in New London</td>
</tr>
<tr>
<td>1749</td>
<td>Academy of Newark is chartered</td>
</tr>
<tr>
<td>1758</td>
<td>Newark receives a Charter from King George II</td>
</tr>
<tr>
<td>1765</td>
<td>Alison’s school moves to Newark</td>
</tr>
<tr>
<td>1769</td>
<td>Delaware is 1st state to ratify the Constitution</td>
</tr>
<tr>
<td>1787</td>
<td>Delaware Court of Chancery is established</td>
</tr>
<tr>
<td>1834</td>
<td>Newark College opens as a degree granting institution</td>
</tr>
</tbody>
</table>
1843
Newark College renamed Delaware College

1837
Philadelphia, Wilmington and Baltimore railroad links Newark to the region

1914
Women’s College opens in Newark

1917
Harter and Wolf Hall mark the first buildings on what will become The Green.

1921
Women’s College and Newark College join to become the University of Delaware

1951
Chrysler Assembly plant built for tank production

1957
Automobile production begins

1957
Automobile production begins

2008
Chrysler Assembly plant closes

2009
UD acquires 272 acres former Chrysler Assembly plant

2011
First Master Plan is developed for the entire 272 acres

2014
College of Health Sciences is completed in the former Chrysler Administrative offices

2009
UD acquires 272 acres former Chrysler Assembly plant

2014
College of Health Sciences is completed in the former Chrysler Administrative offices
Having acquired the former Chrysler assembly plant site in 2009, UD set out to create the STAR Campus, leveraging the proximity to its main campus, northeast regional transit networks, and Delaware’s pioneering business environment.

In the spring of 2014, the University completed the construction of the College of Health Sciences, establishing the first presence of research at STAR. A second phase of construction will complete the southern portion of the building, which will insert clinical research in addition to the introduction of retail tenants, laying the foundation of a diverse mixed-use environment.
INTRODUCTION

Background

2005

Post demolition. 325 tons of concrete, 140 million lbs of steel, 1.6 million lbs of copper, and 40,000 lightbulbs recycled.

Aerial: Chrysler assembly plant during production.

2013

Aerial: Post demolition. 325 tons of concrete, 140 million lbs of steel, 1.6 million lbs of copper, and 40,000 lightbulbs recycled.
INTRODUCTION

REGION

STAR Campus benefits from being at the midway point between the nation’s political center in Washington DC and its economic center in New York. In addition, Philadelphia, Baltimore and Wilmington all contribute to make this one of the most vital regions in the country. In the midst of this northeast corridor lies the STAR Campus, which provides the fertile environment to focus and synthesize the wealth of ideas, which flow through the region.

Aberdeen Proving Ground and Dover Air Force Base ensure that a significant presence from the nation’s defense community is in close proximity.
CONTEXT

STAR Campus is uniquely situated between the two major transportation corridors that serve the east coast, the northeast regional rail corridor which forms its northern boundary and Interstate 95 one mile to the south. With the City of Newark’s Main Street less than a mile away, and the University of Delaware’s Main campus even closer, STAR Campus sits directly to the west of the University of Delaware’s College of Agriculture and Natural Resources and its Athletic Complex.
The overall framework for STAR Campus derives from a series of north-south green corridors that provide spatial organization and diversity of open space, while building parallels to the success and spirit of the University’s historic quad. The Newark Train Station and the College of Health Sciences act as anchors on the site, between which a diverse mix of uses is planned, bringing a vibrancy to this place at all times of the day. A hierarchy of streets creates prominent addresses built around open space, devoting secondary and tertiary streets to provide convenient serviceability. Parcel dimensions are such that they can flexibly accommodate a range of uses, depending on changing needs and market conditions. Development at STAR Campus must conform to the City of Newark zoning Code, and section 32-23.1 related to the STC (science and technology campus) district.
PLANNING PRINCIPLES

- Promote a mix of uses and users
- Plan an “urban” streetscape with active edges that engage pedestrians
- Build upon existing infrastructure
- Use the College of Health Sciences and the train station as anchors
- Plan for change
- Design for sustainability, durability, and flexibility

PLANNING STRATEGIES

- Define a hierarchy of streets
- Plan north-south green corridors
- Make stormwater management a feature and amenity of the site
A MIX OF USES

In order to ensure a vibrant street life, a mix of uses is key. Restaurants and cafés spill onto the sidewalk, featuring everything from a quick sandwich for those on the go, to relaxed farm-to-table fare. Shops offer the essentials in the form of grocery and pharmacy, as well as destination retail. A range of residential unit types cater to graduate students and researchers, and provide market-rate housing for easy regional commuting. The hotel offers superb accommodations for campus guests and a conference center that attracts visitors, providing the regional go-to facility for the exchange of ideas. Research, at the intersection of the diverse fields of health science, cyber security, engineering, and alternative energy, is reinvented and ever-changing.

Opportunities for recreation are abundant at STAR. A network of varied open spaces and parks enables the casual soccer game or throwing of frisbees, while bicycle and pedestrian paths meander through and around the campus. The Athletic Complex to the east is home to the beloved Fightin’ Blue Hens while also acting as host to year round cultural events. Concerts and performances are held regularly at the Bob Carpenter Sports/Convocation Center.

*Street names are working names only, with the exception of Discovery Boulevard and Healthy Way which has been approved by the City of Newark and USPS*
STREET HIERARCHY

A hierarchy of streets combined with a framework of three north-south green corridors provide structure for a diversity of uses, while generating parcel dimensions that have the flexibility for the changing needs of research.

South College Avenue acts as the primary north-south green corridor connecting STAR to the UD Main campus and downtown Newark to the north and I-95 and the region to the south.

Leading south from the station is Avenue 1743, the second north-south green corridor, which provides a primary address for shops, dining and residential uses to the north, and research buildings to the south. A wide street near the station provides a dedicated pedestrian promenade and a welcoming open space for those arriving and departing Newark train station.

Watertower Street, the third north-south green corridor, returns the site to an ecological corridor, offering a refuge for residents and workers alike, while providing a habitat for wildlife and acting as primary component in the stormwater management plan.

Three streets lead west into the site—Station Boulevard, Healthy Way and Discovery Boulevard—offering a generous street width geared toward retail and dining on the ground floor, while accommodating a mix of uses above.

Tertiary streets, provide a necessary means for loading and servicing of buildings.

*Street names are working names only, with the exception of Discovery Boulevard and Healthy Way which has been approved by the City of Newark and USPS*
STATION BOULEVARD

Station Boulevard will serve as the primary means for access to the train station. It is also the primary commercial street at STAR Campus and features sidewalks that can accommodate outdoor seating. A dedicated bike lane is also a feature.

SOUTH COLLEGE AVENUE

South College connects STAR Campus to downtown Newark, the UD Main Campus and the region. It offers the opportunity to announce the University of Delaware and STAR Campus through signage and landscape.
HEALTHY WAY
Healthy Way provides another access route to the site and is in proximity to the College of Health Sciences. It offers the opportunity for commercial space on the ground floor in the long term. Healthy Way also features a dedicated bike lane.

AVENUE 1743 (NORTH)
The northern portion of Avenue 1743 features a wide promenade that serves as the arrival point to STAR Campus and is dedicated to the pedestrian. Either side of the street features commercial space on the ground floor, with residential or research uses above. Sidewalk widths are generous to accommodate outdoor café seating.
**WATERTOWER STREET**

The third north-south green corridor, a greenway that combines pedestrian and bicycle pathways amongst a rich ecology, is central to the overall stormwater strategy for the site. It creates a prominent address in featuring the iconic and historic watertower.

**AVENUE 1743 (SOUTH)**

The southern portion of Avenue 1743 is geared toward creating a prominent address for research institutions. The eastern sidewalk is wider to devote more space to the pedestrian, while also accommodating sidewalk seating and offering afternoon sunlight.
**MIDDLE STREET**

This street type is geared to providing the service needs of diverse research. It offers limited on-street parking, and sidewalks featuring street trees and lighting.

**ALLEY**

The east-west alley is dedicated to service. Pedestrian access is limited. Primary utility service rooms are located here.
FRAMEWORK PLANNING PRINCIPLES

To promote groundbreaking research, the buildings at STAR Campus must inspire. The intent is for architects and designers to build on the principles herein and not to be limited by them. However, several principles outlined here should be embraced.

A. 90-Percent Parcel Coverage
In addition to specific open spaces that are part of the framework of STAR Campus, by defining a maximum limit of 90-percent parcel coverage an additional layer of open space is developed.

A. Holding the Street Wall
To provide a strong sense of urban placemaking, a consistent street wall is important. Edges of parcels on primary streets should maintain at least 80-percent coverage on the parcel line.

B. Ground-Level Transparency
To promote an open research environment and conditions for active retail and dining facilities, transparency on the ground level along primary streets should be at least 60-percent.

B. Upper-Level Transparency
To reveal uses on the upper levels and for daylighting, transparency on the upper levels should be 40-percent or greater.

B. Screened Mechanical Penthouses
The screening of mechanical equipment should be integral to the architecture and vertically conceal equipment from view.

B. Retail
Neutral piers, and/or solid areas along the parcel line, should be no wider than four feet. Glazing should be of clear non-reflective glass to maximize transparency.

C. Entries
Primary entrances to buildings should be along primary streets and be prominent and visually recognizable, while providing modest cover from the elements.

C. Mid-block Pedestrian ways
For additional means of circulation, the framework relies on a layer of interior or exterior mid-block pedestrian ways as illustrated in the Development Metrics.

C. Service
Location of loading docks and service entries is restricted to secondary and tertiary streets.
D. Sustainability
Sustainability is a defining character of STAR Campus. From the urban scale down to the research lab, at all levels, an approach that considers the short and long term environmental impact of development must inform the design. Such a holistic approach will set STAR Campus apart from other research campuses. In addition, harnessing current UD research during the design process offers the opportunity for STAR Campus itself to be a living and evolving example of sustainable research.

E. Materials
Building for the long term will require the use of durable and innovative materials that evoke quality and enhance a building’s performance. Materials play an important role in defining the sensibility of overall the campus while also defining individual neighborhoods.
SITE ACCESS

STAR Campus is fortunate to be served by layers of transportation networks that connect it to the region and beyond. Rail lines and I-95 place it within an hour of Baltimore and Philadelphia and its airports, while Washington and New York can be reached in two hours. A number of local buses and shuttles provide local connections.

STAR Campus is walkable, with wide sidewalks and paths, and the campus can be traversed from north to south in 15 minutes. The campus is also a short walk and bike ride to the UD Main Campus, while also connecting to regional and national trails.
RAIL

Amtrak Northeast Regional
Amtrak currently offers two weekday southbound and northbound trains, with three on the weekend.

WEEKDAY SOUTHBOUND (3:01PM & 7:40PM)
WEEKEND SOUTHBOUND (8:46AM, 5:05PM & 8:05PM)
   BALTIMORE 44 MIN
   BWI 57 MIN
   WASHINGTON 1 HR 30 MIN

WEEKDAY NORTHBOUND (2:24PM & 4:47PM)
WEEKEND NORTHBOUND (9:32AM, 3:44PM & 8:42PM)
   WILMINGTON 15 MIN
   PHILADELPHIA 32 MIN
   NYC 2 HRS

SEPTA
SEPTA currently connects Newark to downtown Philadelphia’s Market Street Station, with 10 northbound and 9 southbound trains each weekday.

   WILMINGTON 19 MIN
   PHILADELPHIA 1 HR 21 MIN

MARC
With the building of the Newark Train Station, MARC is expected to connect to Newark with 9 northbound and 9 southbound trains each weekday.
**SHUTTLES • BUSES**

*UD Shuttle*
The University of Delaware operates frequent shuttles, connecting all parts of the university.

*Newark Unicity*
The City of Newark and UD Transit operate three bus lines *N-1, N-2 & N-3* connecting greater Newark.

*DART*
DelDOT operates numerous bus lines connecting to downtown Newark and Wilmington. Bus lines *16, 33, 39, 55, 59* and *65* service the site.

*Megabus*
Megabus currently makes two stops each day north and southbound, from the UD–Laird Campus connecting to New York, Philadelphia, Baltimore and Washington DC.
VEHICULAR CIRCULATION

The site is accessed via three southbound and two northbound intersections along South College Avenue (Delaware Route 896), and one intersection from the south on Christina Parkway (Delaware Route 4), with an additional second westerly access point to follow in the future.

On-Street Parking
On-street parking can consistently be found on primary streets to enable convenient parking options, while also acting to define the pedestrian realm. Approximately 650 parking spaces can be accommodated with on-street parking.

Surface Parking
In its early phases, STAR Campus will make use of surface parking to accommodate parking needs.

Structured Parking
As parking demand increases over time, each neighborhood has a dedicated, centrally-located parking structure for easy access. The largest structures are located near the Newark Train Station to take on additional demand for station access.

Car Sharing
With car sharing already taking place at UD and in Newark STAR Campus will be a natural location for the growing car sharing community.

Capacity of the garages depending on structure height is as follows:

<table>
<thead>
<tr>
<th>STRUCTURE</th>
<th>AREA (SF)/LEVEL</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
<th>L5</th>
<th>L6</th>
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<td>A5</td>
<td>103,625</td>
<td>314</td>
<td>628</td>
<td>942</td>
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<td>909</td>
<td>1,364</td>
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<td>E5</td>
<td>34,800</td>
<td>105</td>
<td>211</td>
<td>316</td>
<td>422</td>
<td>527</td>
<td>633</td>
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<tr>
<td>F5</td>
<td>69,600</td>
<td>211</td>
<td>422</td>
<td>633</td>
<td>844</td>
<td>1,055</td>
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<tr>
<td></td>
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<td>1,085</td>
<td>2,170</td>
<td>3,255</td>
<td>4,340</td>
<td>5,424</td>
<td>6,509</td>
</tr>
</tbody>
</table>
SITE ACCESS + CIRCULATION (Vehicular Circulation, Parking, + Car Sharing)

- Structured Parking
- Vehicular Inbound Access Points
- Vehicular Outbound Access Points
- On-Street Parking
- Signalized Intersection

- NORTH
- SOUTH COLLEGE AVENUE
- CHRISTINA PARKWAY

- Nodes:
  - D5
  - A5
  - F5
  - E5
PEDESTRIAN CIRCULATION

The pedestrian realm is a priority at STAR Campus. With wide sidewalks and boulevards, a variety of open spaces and parks, dedicated pedestrian passages and an extensive greenway, the pedestrian can traverse the site with limited vehicular interaction. From the train station, the entirety of STAR Campus is within a 10 minute walk, and the UD Main Campus can be reached in about 10 minutes.
BICYCLE CIRCULATION

STAR Campus will integrate and promote bicycle use on its network of bike paths. Through dedicated and protected bike lanes on primary streets to bike paths along the greenway, the STAR Campus is accessible by bike. These networks connect into existing local and regional bike paths, leading to the UD Main Campus, the City of Newark, and the region. The northern portion of the site, via the Hall Trail, lies on the extensive East Coast Greenway, a 2,900 mile bike trail connecting Florida to Maine.
LOADING + SERVICE

Convenient loading and service are critical to providing flexibility for diverse uses and the changing needs of research. Using secondary and tertiary street networks, all service is located at the side or rear of buildings. Shipping and receiving of goods, and the removal of waste and recycling are afforded dedicated routes while keeping primary streets free.
SITE ACCESS + CIRCULATION

Loading Docks
Service Streets
NEIGHBORHOODS

The creation of distinct neighborhoods at STAR Campus serves to attract diverse constituents. A mix of uses, a variety of open space, the quality of landscape and lighting each have an important role to play in defining a neighborhood. To the north, the neighborhoods are mixed-use in nature, while those to the south are geared toward research. Each neighborhood has a primary open space, supported by secondary open space that reinforce the identity. Throughout STAR Campus, common landscape and lighting elements give a consistency to the campus, while each neighborhood incorporates a unique approach.
OPEN SPACE

A primary open space anchors and defines each of the five neighborhoods at STAR Campus, consisting of the Mixed-Use Green, Promenade, Triangle Park, Health Science Park and Research Center Green. The character of each neighborhood should be unique, its corresponding open space setting the tone. These include a lawn, a boulevard, an urban park, healing garden and formal green. Each primary open space is central to its neighborhood and within a 5-minute walk from the next.
Mixed-Use Green

Nestled into the northern portion of the site is a green accessible by a mix of uses. The hotel and conference center, a research and residential building, all share frontage on this park. The park features a great lawn, large enough to host events under a tent or for setting up a stage, as well as pick-up soccer game or game of frisbee. A playground might also find a home here.
**Promenade**
A dedicated tree-lined pedestrian promenade greets those arriving at Newark Train Station. The promenade is wide, a central sidewalk leads visitors into the heart of STAR Campus. Lined with benches, water features and public art, the promenade is also a convenient loop for those getting dropped off by car or bus to catch a train. Sidewalk cafés and restaurants line both sides of the street, giving this neighborhood a distinctly urban feel. The promenade arrives at a small green along Station Boulevard, on its lawn, a variety of gatherings take place, including a weekly farmer’s market. At the center of the promenade a pedestrian passage leads east to connect to the Mixed-Use Green neighborhood.
**Triangle park**

At the confluence of Healthy Way, Station Boulevard, and Watertower Street lies Triangle Park. This urban park features a terraced landscape and water feature, ideal for a lunch break or casual meeting place among colleagues. Its eastern edge connects to the Promenade neighborhood, while its western edge intersects the Greenway, the most extensive open space on STAR Campus. The Greenway is the ecological corridor which runs the length of the site from north to south, and is home to the historic Watertower. Pedestrian and bicycle paths meander, accompanying a waterway.
Landscape at STAR Campus plays a vital role in defining neighborhood identity, while maintaining the overall framework of north-south corridors that organize the campus as a whole. The quality of walking surfaces, variety of trees and plantings, and careful consideration of street furniture, signage and lighting reinforce the character of a particular neighborhood.

High quality pavers can be found along the promenade and primary streets, colored concrete sidewalks are found on secondary streets, while gravel paths wind through the ecological corridor providing a variety of textures throughout the campus. A bold palette of tree species gives identity to individual streets and open spaces, while the nature of plantings varies from one neighborhood to another.
A Triangle Park
B Promenade
C Mixed-Use Green
LIGHTING

Lighting represents an additional opportunity to define STAR Campus as a whole, while lending each neighborhood its own personality. A typical streetlight fixture on all streets will serve to unify the entire campus. Secondary light fixtures specific to each neighborhood can address its varied functional needs. Energy efficient luminaires and fixtures, that do not contribute to night sky pollution, are hallmark lighting features at STAR Campus.
DEVELOPMENT METRICS

The STAR Campus Master Plan provides parcels which are flexible for a range of uses. With parcel depth generally between 116 and 145 feet, residential, research, or office uses can be accommodated, depending on market conditions and development interest. This section illustrates the individual parcel metrics while also highlighting the qualitative aspects of a given neighborhood.

A maximum lot coverage of 90 percent is prescribed to ensure additional open space. With a desire to make STAR Campus a dense urban research campus, building heights have been suggested accordingly to illustrate the capacity of the site and serve as a benchmark. Zoning limits the maximum building height to 150 feet.
### A + B Parcels

These parcels offer the greatest diversity of uses at STAR Campus, building upon ground floor retail and dining along Station Boulevard and Avenue 1743, that leads to the Newark Train Station. A mix of residential, hotel, research and conference center uses can be found here. Taking advantage of infrastructure investments already in place, these parcels lend themselves to development in the early phase.

Visibility from South College Avenue and proximity to the College of Health Sciences (CHS) are notable assets for these parcels. Station Boulevard is projected to carry the greatest amount of traffic leading to the site. Opportunities for ground floor retail and dining exist along Healthy Way to the south. Avenue 1743, with its generous sidewalks, marks the western edge leading to the Train Station. An open space, the Mixed-Use Green, centered within the A parcels creates a focal point for the neighborhood. Parking is located along the northern edge to minimize distances to the station.

<table>
<thead>
<tr>
<th>PARCEL</th>
<th>(AVE) LENGTH</th>
<th>(AVE) WIDTH</th>
<th>PARCEL AREA (SF)</th>
<th>90% COVERAGE</th>
<th>HEIGHT</th>
<th>BUILD-OUT (SF)</th>
<th>FAR</th>
<th>RESIDENTIAL</th>
<th>RESEARCH/OFFICE</th>
<th>RETAIL/DINING</th>
<th>GROCERY</th>
<th>HOTEL</th>
<th>CONFERENCE</th>
<th>STRUCTURED PARKING</th>
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</table>
**C + D PARCELS**

With proximity to the Newark Train Station and an eastern edge along Avenue 1743, these parcels offer opportunities for a mix of uses with an emphasis on research. Parcel D1 enjoys access to the pedestrian promenade leading to the station, and a diversity of open spaces that lead all the way to the greenway. Healthy Way provides direct right-in access from South College and eventually leads to western portions of the site. Around Triangle Park, parcels C2, D2, D3 and D4 all have views of the watertower.

<table>
<thead>
<tr>
<th>PARCEL</th>
<th>(AVE) LENGTH</th>
<th>(AVE) WIDTH</th>
<th>PARCEL AREA (SF)</th>
<th>90% COVERAGE</th>
<th>HEIGHT</th>
<th>BUILD-OUT (SF)</th>
<th>FAR</th>
<th>RESIDENTIAL</th>
<th>RESEARCH/OFFICE</th>
<th>RETAIL/DINING</th>
<th>GROCERY</th>
<th>HOTEL</th>
<th>CONFERENCE</th>
<th>STRUCTURED PARKING</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>270'</td>
<td>134'</td>
<td>36,164</td>
<td>32,548</td>
<td>6</td>
<td>195,286</td>
<td>5.4</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C2</td>
<td>175'</td>
<td>240'</td>
<td>41,888</td>
<td>37,699</td>
<td>4</td>
<td>150,797</td>
<td>3.6</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D1</td>
<td>266'</td>
<td>89'</td>
<td>23,274</td>
<td>20,947</td>
<td>5</td>
<td>104,733</td>
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<td>*</td>
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<td></td>
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</tr>
<tr>
<td>D2</td>
<td>263'</td>
<td>120'</td>
<td>31,510</td>
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<td></td>
</tr>
<tr>
<td>D3</td>
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<td>4</td>
<td>90,720</td>
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<tr>
<td>D4</td>
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<td>*</td>
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</tr>
<tr>
<td>D5</td>
<td>533'</td>
<td>210'</td>
<td>149,985</td>
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<td>899,910</td>
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<td>*</td>
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</tr>
</tbody>
</table>

**DEVELOPMENT METRICS**

<table>
<thead>
<tr>
<th>PARCEL DESIGNATION</th>
<th>TOTAL PARCEL AREA (SF)</th>
<th>TOTAL AREA WITH PARKING</th>
<th>TOTAL PARCEL AREA (ACRES)</th>
<th>TOTAL AREA WITHOUT PARKING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>345,108</td>
<td>1,683,375</td>
<td>7.92</td>
<td>783.465</td>
</tr>
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</table>

DEVELOPMENT METRICS (C+D Parcels)
### E Parcels

Parcels in this neighborhood have the College of Health Sciences as an already established anchor. With frontage along South College Avenue, these parcels enjoy high visibility and easy access to the rest of the university and to I-95. Discovery Boulevard offers the opportunity for ground level retail and dining that could take advantage of visitors to the athletic facilities and events there, across South College to the east. Its western edge along prominent Avenue 1743 has parcel depths of 130 feet, well-suited for office or research uses. A range of open spaces of varied scales encompass this neighborhood, with a dedicated pedestrian pathway leading west toward the Greenway in its northwest corner. Parking is located central to this neighborhood for easy access.

<table>
<thead>
<tr>
<th>Parcel</th>
<th>(Ave) Length</th>
<th>(Ave) Width</th>
<th>Parcel Area (SF)</th>
<th>90% Coverage</th>
<th>Height</th>
<th>Build-Out (SF)</th>
<th>Far</th>
<th>Residential</th>
<th>Research/Office</th>
<th>Retail/Dining</th>
<th>Grocery</th>
<th>Hotel</th>
<th>Conference</th>
<th>Structured Parking</th>
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</thead>
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<tr>
<td>E1</td>
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<td>143'</td>
<td>44,221</td>
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<td>*</td>
<td>*</td>
<td>*</td>
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<td></td>
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</tr>
<tr>
<td>E2</td>
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<td>32,617</td>
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<td>2</td>
<td>58,711</td>
<td>1.8</td>
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<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E3</td>
<td>198'</td>
<td>130'</td>
<td>25,740</td>
<td>23,166</td>
<td>7</td>
<td>162,162</td>
<td>6.3</td>
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<td>*</td>
<td>*</td>
<td>*</td>
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<td>E4</td>
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<td>37,700</td>
<td>33,930</td>
<td>5</td>
<td>169,650</td>
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<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E5</td>
<td>290'</td>
<td>120'</td>
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<td>208,800</td>
<td>6.0</td>
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<td>*</td>
<td>*</td>
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<td></td>
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</tr>
<tr>
<td>E6</td>
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<td>130'</td>
<td>42,325</td>
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<td>5</td>
<td>190,463</td>
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<tr>
<td>E7</td>
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<td>34,440</td>
<td>30,996</td>
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<tr>
<td>E8</td>
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<table>
<thead>
<tr>
<th>Total Parcel Area (SF)</th>
<th>286,393</th>
<th>Total Area With Parking</th>
<th>1,166,349</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Parcel Area (ACRES)</td>
<td>6.57</td>
<td>Total Area Without Parking</td>
<td>957,549</td>
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</tbody>
</table>
### Development Metrics [F Parcels]

This neighborhood of parcels is in the heart of STAR Campus. Healthy Way to the north and Discovery Boulevard to the south provide quick access to South College Avenue. Science Boulevard to the west provides additional access south to Route 4 and lends itself to heavier truck traffic. The Greenway’s ecological corridor provides respite and inspiration for the entire Campus and features the historic watertower. Research Center Park along Discovery Boulevard provides additional open space to the south providing a focal point for research buildings. A dedicated pedestrian path runs east-west to the north and leads to the Greenway. Mid-block pedestrian-ways are encouraged throughout to provide additional porosity through buildings.

<table>
<thead>
<tr>
<th>Parcel</th>
<th>(AVE) Length (ft)</th>
<th>(AVE) Width (ft)</th>
<th>Parcel Area (SF)</th>
<th>90% Coverage (SF)</th>
<th>Height</th>
<th>Build-Out (SF)</th>
<th>FAR Residential</th>
<th>Research/Office</th>
<th>Retail/Dining</th>
<th>Grocery</th>
<th>Hotel</th>
<th>Conference</th>
<th>Structured Parking</th>
</tr>
</thead>
<tbody>
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<td>26,532</td>
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<tr>
<td>F3</td>
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<td>134</td>
<td>43,628</td>
<td>39,265</td>
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<td>157,061</td>
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<tr>
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<tr>
<td>F8</td>
<td>290</td>
<td>130</td>
<td>37,700</td>
<td>33,930</td>
<td>5</td>
<td>169,650</td>
<td>4.5</td>
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<td>*</td>
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<td></td>
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<tr>
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<td>*</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>F11</td>
<td>290</td>
<td>116</td>
<td>33,640</td>
<td>30,276</td>
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<td>121,104</td>
<td>3.6</td>
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<td>*</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F12</td>
<td>312</td>
<td>116</td>
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<td>95,672</td>
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<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Parcel Area (SF):** 442,339
**Total Parcel Area (ACRES):** 10.15
**Total Area With Parking:** 2,001,584
**Total Area Without Parking:** 1,583,984
STAR Campus benefits from already having a substantial utility infrastructure in place through recent investments. The framework builds off these existing utilities while directing future services through the tertiary street network, to allow the fronts of buildings along primary streets to be transparent and flexible.
STORMWATER

In building the Chrysler Assembly plant, an 84 inch stormwater pipe was installed from north to south. The framework plan intends to keep this pipe in place. Two perpendicular east-west stormwater pipes run down Station Boulevard and Discovery Boulevard. Along Avenue 1743, an urban street integrates as much pervious area as possible in sidewalks and open spaces, collecting all stormwater eastward and one block west.

The Greenway integrates bioretention areas with pervious paths that address substantial stormwater requirements in a pleasant and active manner, which eventually seamlessly tie into the natural existing parkland to the south.

Larger stormwater management areas have been designed to the west of Science Boulevard. An existing underslab storm sewer runs roughly west from the College of Health Sciences to intercept the 84 inch storm culvert.

The use of Green Roofs is an added component in the overall stormwater strategy. Green roofs on lower level roofscapes create an aesthetic backdrop to surrounding taller buildings. Combined with rainwater harvesting, the management of stormwater at STAR Campus exudes innovation.
WATER SUPPLY • SANITARY SEWER

Water Supply
The site has the unique condition of being supplied by two water companies. The northern portion of the site is supplied by the City of Newark. From the south and from the north along the Greenway, United Water Supply has existing supply lines and meter buildings. From there 1743 Holdings distributes water to the site. Infrastructure around the College of Health Sciences should be integrated into the framework.

Sanitary Sewer
Sanitary lines are in place along Science Boulevard and Discovery Boulevard. Future sanitary lines should favor the tertiary streets. A Newcastle County sanitary interceptor crosses the site diagonally along the southern edge and must be considered in future planning to the south.
POWER + TEL/DATA

Power
An existing substation on-site, which will be decommissioned in lieu of a new substation at the northern edge of the site and to the west of the Greenway. The size of the substation has been estimated to require approximately three acres. In addition to supplying power to STAR Campus, the substation has three supply feeders that leave the site.

Tel/Data
A tel/data loop has been installed from South College Avenue, down Healthy Way, to Science and Research Boulevards. Along Discovery Boulevard the loop is nearing completion. An additional loop will be required to the north to reach the train station. In later phases, an extension eastward along Research Boulevard is required.
Natural gas lines have been installed from South College Avenue, down Healthy Way, to Science and Research Boulevards, and are nearing completion along Discovery Boulevard. A gas regulator is currently in place at the intersection of South College Avenue and Station Boulevard. Given that this intersection is projected to be the busiest, this framework recommends relocating the regulator to the northeast corner of the site, tying into the existing gas line along the west side of South College Avenue. The relocated regulator should be integrated into the ample parkland in the northernmost portion of the site.
PHASING

The full development of STAR Campus is expected to occur in phases, while the essence of a preeminent research campus that fosters collaboration between university and private research partners is already in place. In each phase, critical investments in infrastructure and open space will be required. These must enable the development of subsequent phases while leveraging established assets and contributing to the overall vibrancy of the campus.

79 Early Phases
81 Middle Phases
83 Later Phases
85 Completed
EARLY PHASES

In the early phase, STAR Campus relies on the College of Health Sciences, the Newark Train Station and its initial infrastructure investment as foundations for the campus. As a result, development around CHS and the station are anticipated first, as well as an initial influx of a mix of uses, of which retail, dining and residential uses are critical.

The network of primary streets is established in the form of Healthy Way, Station Boulevard, Avenue 1743, Discovery Boulevard and Science Boulevard. Surface parking satisfies the initial parking needs of the site, with limited on-street parking.

Important in the early phase is additional investment in landscape. The initial planting of trees to serve as nurseries for future parks and landscaping establish an immediate green space for current occupants.

<table>
<thead>
<tr>
<th>TOTAL GSF BY USE (EARLY PHASES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research/Office</td>
</tr>
<tr>
<td>Dining/Retail</td>
</tr>
<tr>
<td>Residential (116 UNITS)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>
MIDDLE PHASES

The middle phases complete the establishment of Station Boulevard as the primary commercial street, while also developing both sides of Avenue 1743 as it meets the station, shaping the two primary arrival experiences to STAR Campus. A critical mix of uses is in place, with the addition of a grocery and hotel, and a critical mass of research buildings is forming around the College of Health Sciences.

The greenway, from the northern edge south to Research Boulevard. Trees from the earlier nursery, including the pedestrian promenade, the Mixed-Use Green and Triangle Park, have been transferred to other open spaces, which now take on a more mature nature.

Secondary streets are built and surface parking is provided on future structured parking sites and on empty parcels.

TOTAL GSF BY USE (MIDDLE PHASES)

<table>
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<th>Use</th>
<th>GSF</th>
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</thead>
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<tr>
<td>Hotel/Conf.</td>
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<tr>
<td>Dining/Retail</td>
<td>124k</td>
</tr>
<tr>
<td>Grocery</td>
<td>15k</td>
</tr>
<tr>
<td>Residential</td>
<td>345k</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>2,014k</strong></td>
</tr>
</tbody>
</table>
## LATER PHASES

At this point, the framework is complete, streets and infrastructure have been developed, and the network of open spaces is in place. From South College Avenue and arriving at the station, a lively street life is present at all times of day.

The greenway is now fully established and connects at the south to the existing wetlands. Pedestrian and bike paths are in place around the perimeter of the entire 272 acres, a nearly three mile loop.

The first parking structures are built to accommodate greater parking demand.

### TOTAL GSF BY USE (LATER PHASES)

<table>
<thead>
<tr>
<th>Use</th>
<th>GSF</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>Hotel/Conf.</td>
<td>175k GSF</td>
</tr>
<tr>
<td>Dining/Retail</td>
<td>135k GSF</td>
</tr>
<tr>
<td>Grocery</td>
<td>15k GSF</td>
</tr>
<tr>
<td>Residential (558 UNITS)</td>
<td>590k GSF</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>2,865k GSF</strong></td>
</tr>
</tbody>
</table>
### COMPLETED

The STAR Campus is complete, all parcels have been fully developed, and open spaces are maturing. Buildings from the early phase may no longer provide the desired density and may start seeing redevelopment. All parking structures are now in place.

<table>
<thead>
<tr>
<th>Use</th>
<th>GSF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research/Office</td>
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<tr>
<td>Hotel/Conf.</td>
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</tr>
<tr>
<td>Dining/Retail</td>
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</tr>
<tr>
<td>Grocery</td>
<td>15k</td>
</tr>
<tr>
<td>Residential</td>
<td>590k</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>3,520k</td>
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</tbody>
</table>

### TOTAL GSF BY USE (COMPLETED)

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<thead>
<tr>
<th>Use</th>
<th>GSF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research/Office</td>
<td>2,605k</td>
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<tr>
<td>Hotel/Conf.</td>
<td>175k</td>
</tr>
<tr>
<td>Dining/Retail</td>
<td>135k</td>
</tr>
<tr>
<td>Grocery</td>
<td>15k</td>
</tr>
<tr>
<td>Residential</td>
<td>590k</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>5,520k</td>
</tr>
</tbody>
</table>
[USEFUL LINKS]
University of Delaware  www.udel.edu
STAR Campus  www.udel.edu/star
UD Path to Prominence  www.udel.edu/prominence
UD Sustainability  www.udel.edu/sustainability
UD College of Health Sciences  www.udel.edu/chs
UD Athletics  www.bluehens.com
City of Newark Zoning  www.cityofnewarkde.us/index.aspx?id=59
Court of Chancery  courts.delaware.gov/chancery
Amtrak  www.amtrak.com
SEPTA  www.septa.org
MARC  mta.maryland.gov/marc-train
Norfolk Southern  www.nscorp.com
UD Shuttle  www.udshuttle.com
Newark Unicity  www.cityofnewarkde.us/index.aspx?NID=78
DART Bus  www.dartfirststate.com
Megabus  www.megabus.com
Zipcar  www.zipcar.com
East Coast Greenway  www.greenway.org
United Water  www.unitedwater.com/delaware
Delmarva  www.delmarva.com
State of Delaware DNR  www.dnrec.delaware.gov/swc

[CONTACT INFORMATION]
Facilities, Real Estate & Auxiliary Services
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222 South Chapel Street
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(302) 831-1110
www.udel.edu/star.

[CREDITS]
This document is a summary of a collaborative design process between the University of Delaware, Elkus Manfredi Architects, Sasaki Associates and Duffield Associates in 2014. Through interviews with University leadership, research in the University’s archives, and insight from 1743 Holdings experience with current conditions of the site, the team developed the Master Plan put forth here.