Arborway Yard

Bianca Rabbie, Zeina Alkhaja, and Nathalia Galindo
• Community services and amenities (grocery stores, pharmacy, childcare facilities, hardware shop, restaurants)
• Need for: affordable housing, youth recreation, retail, light industrial, the Emerald Necklace Re-Connector and mixed-use development.
• “for continuous pedestrian arcade. … landscaped plaza areas and opportunities for outdoor seating.”
• more connected mobility network for pedestrians and cyclist
• Develop supportive housing units to accommodate Boston’s growing population of individuals facing severe mental illness, substance use disorders, and homelessness
• environmental justice
  • Assess the status of site contamination and develop the program for soil remediation.
• Improve landscaping and access points to Franklin Park for pedestrian access.
• 70% of respondents said that “wetlands” and “waterbodies” were the most popular park features used by residents
  • increase water-based recreation
• Design a more modern bus parking, with efficient use of space

• Provide community services and amenities (aiming to provide the "15 min city")
  • Pharmacy
  • Grocery store
  • Hardware Shop
  • Childcare facilities
  • Restaurants

• Stormwater management strategies
  • Constructed Wetlands
  • Increase green space
  • Pervious surfaces

• Provide more outdoor space
  • Seating area
  • Recreational space for children
  • Green connector-extension of Frankling Park
  • Increase tree canopy (Jamaica Plain and Roxbury both experienced a significant net loss of tree canopy in the last decade)
Housing for the formerly Homeless
Housing for the Formally Homeless/
Health Clinic

5 Stories
~5000 sf

Residential

2 Stories
~280,000 sf

MBTA

3 Stories
~70,000 sf

Residential Units

3 Stories
~70,000 sf

Residential

5 Stories
~ 700,000 sf

Residential

4 Stories
~ 700,000 sf

Housing for the Formally Homeless/
Health Clinic

5 Stories
~500,000 sf

Residential
6 Stories

Commercial / Retail

Health Services &
Residential

Residential
Landscaping Ideas?

- Use of permeable floor surfaces.
- Multilevel greenscape to foster curiosity + temporality
- Flowers + leaves at different times
Sidewalk Treatments

- Different sidewalks would allow for different scales of activity.
- Could act as a community hub, continuation of commercial space, or a green corridor.
Porosity of Commercial Realm

- People feel able to enter the building + interact with the businesses
- It feels more welcoming
- Fosters community businesses?
Porosity of Commercial Realm

- The scale of urban block often blocks people from moving into spaces.
- How do we make these locations more accessible?
- Plaza-like green space for congregation + infrastructure points (ie hubway or city info)
- Bike safe pathway
- Programmed commercial space
Section

- Greenway with focus on pedestrian + bike circulation
- Small alleyway between buildings
Section

- Multi-type programmed outdoor space
- Daylight stony brook
- High dense planting + permeable ground
Neighborhood Profile:

- Population: 39,240
- Population density: 12,188 ppsm
- Average age: 35 y.o.
- Large Hispanic community (25%)
- Median income: $32,41
- 55% of the population is b/w the ages of 25-64 y.o.
- High estimated asthma prevalence rates of 16%
- High mortality rate due to stroke & heart disease
- 34% of households do not own a motor vehicle
Neighborhood Health Concerns:

- 50% housing quality or affordability emerged as the top leading health concern
- Jamaica Plain reported a higher than Boston rate of suicide
- 51% of adults were reported obese or overweight
- Nearly 1 in 5 residents report being food insecure

Top Concerns in the Community that Affect their Health:

- Housing quality or affordability: 50.5%
- Alcohol/drug overdose: 49.0%
- Mental health: 42.1%
- Community violence: 31.1%
- Environment: 27.7%
- Obesity: 24.5%
- Homelessness: 24.1%
- Smoking: 23.1%
- Poverty: 22.8%
- Diabetes: 22.8%
- Employment/job opportunities: 22.3%
- Elder/aging health issues: 22.1%
Pre-Design Health Assessment & Existing Conditions

Key
- Flood Risk
- Heat Risk
- Urban Noise
- Milton Stable Community Garden
- Match Charter Public Middle School
- Bus Stops
- Planet Fitness
- Forest Hills Station
- Arborway Yard Site Boundary

200 ft
Potential Programs for the Site

- **Mixed-Use**
  - Daycare Center
  - Convenience Market
  - Community Center
  - Pharmacy

- **Health Services**
  - Homeless & Addiction Shelter
  - Psychiatric Facility
  - EMS Facility

- **Open / Green Space**
  - Community & Pollinator Garden
  - Public Playground/ Park
  - Bioretention Lawn / Green Amphitheater
How Healthy Design Strategies Contribute to Health

Environmental Benefits
→ Improve air quality & reduce pollution
→ Manage stormwater & effects of flood events
  → Mitigate urban heat island effect
  → Create a noise pollution barrier

Improved Physical & Mental Health
→ Reduce stress and anxiety
→ Improve patient recovery
→ Walkable environments & increased activity

Community Cohesion
→ Promote community engagement
→ Connect site to existing green spaces
Monitoring Plan

Methods of Evaluation

Community Survey
- Residents rate their levels of excitement, frustration, community engagement, satisfaction, frustration, attention restoration, stress, anxiety, mental & social well-being
- Rate physical activity level
- Rate usage of amenities and services

Data Collection
- Measure flooding, air quality, urban noise, & urban heat (before and after development)
- Physiological exams (stress, anxiety, depression)
- Record patient stress level before & after spending time outside
- Record daily activities of patients & see their healing patterns
- Compare patient recovery times with other locations

Observational Research
- Activity level of mix-use & green space
- Usage of amenities (walking paths, community garden, amphitheater, MBTA bus facility)
Thank You!
Design Research References


References

- Analysis of Best Use Options for Arborway Yard
- http://www.bostonplans.org/getattachment/7987d9b4-193b-4749-8594-e41f1ae27719
- https://www.cityofboston.gov/parks/pdfs/os3i.pdf
Arborway Yard

Building Well-Being
Adding resources
Building social capital
Promoting health
Green infrastructure
In danger of...

Stormwater flooding

Land surface temperature
Adding Bioswales to the triple decker neighborhood to help control stormwater flooding. Could be implemented through sidewalks by street grid.
Small topographic measures can be set in place along with the removal of impervious surfaces to drain stormwater flooding into the proposed daylit creek.
Circulation

- Bike
- Walking
- Driving
Green Space + Social Capital

Nature can restore deficits in attention arising from overwork or over-concentration, making people both feel and think better (Hartig et al., 1991, 2003) (Pretty/Nature and Mental Physical Health).

Elder Stubbs garden in Oxford, grew veggies, flowers, fruits, sold back to the people in the community (Pretty). In more than half of the cases, the gardens had changes the attitudes of the residents about their neighborhood, and in a third, they had led to collective action to address local issues. Participants states that benefits arose from both individual contact with nature, and from connections with their social group sharing the experiences.

The findings underline the importance of social wellbeing as predictors of stress and, to a lesser extent, general health.
Green Space

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A walkable neighborhood?

Adding a Pharmacy and Hardware Store will not only give Arborway Yard needed resources but also the community surrounding it.

*Picture 1. Source: Google Maps*
Brewery
Buildings

One of our stakeholders, MBTA, requires a large portion of the site to be the Battery Electronic Bus facility. Thus we can have limited lands for green space, housing, and supportive service.

Sources: FHII (2008), MBTA CNG Bus Facility Design (2012)

The triple-decker layout makes our project better blend into the surrounding fabric.
The two-story half-underground bus facility layout reduces this program's footprint, endows the surrounding community more space for affordable houses, greenaries, and community services.
- **Complex (8F):**
  - Commercial: 3.67
  - Residential: 11.02
    (450 Units)

- **Complex Tower (15F):**
  - Residential: 9.50;
    (410 Units)

- **Triple-decker (3F):**
  - Total Area: 3.22;
    (87 Units)

- **Bus Facility (1F and 1UG):**
  - Total Area: 5.84;

- **Supportive Housing Service (6F):**
  - Commercial: 2.01;
  - Shattuck: 10.07;

**Total Residential Units: 947**
Community Feedback

SURVEYS

SELF-REPORTED STRESS LEVELS

NEIGHBORHOOD HEALTH DATA
The Neighborhood

- Jamaica Plain
  - Health
    - Transportation methods
      - 63.5% take car to work
      - 15.5% take the bus
      - 9.2% bike
      - 8.8% walk
    - Households receiving Supplemental Nutrition Assistance: 13%
    - Below Poverty Line: 18.3%
    - Mental Health:
      - Persistent Sadness: 10.7%
      - Persistent Anxiety: 22%
      - Mental Health Hospitalizations: 76.3/10,000
    - Open Space: 37.2%
    - Walk Score: 72-83
    - Asthma Emergency Department Visits: 108.3/10,000
    - Uninsured: 3.4%
    - Adults Getting Enough Physical Activity: 26%
The Neighborhood

- Roxbury
  - Health
    - Transportation methods
      - 54% take car to work
      - 34% take the bus
      - 2.3% bike
      - 8.4% walk
    - Households receiving Supplemental Nutrition Assistance: 33.1%
    - Below Poverty Line: 36.2%
    - Mental Health:
      - Persistent Sadness: 13.3%
      - Persistent Anxiety: 26.4%
      - Mental Health Hospitalizations: 78.2/10,000
    - Open Space: 9.2%
    - Walk Score: 72-83
    - Asthma Emergency Department Visits: 256.8/10,000
    - Uninsured: 4.7%
    - Adults Getting Enough Physical Activity: 19.8%
Health Resources

- Between Franklin Park and Arnold Arboretum, there is a solid amount of green space in the nearby area
- Two major hospitals in close proximity
- Decently walkable neighborhood although it could be better
- Planet Fitness is right in the neighborhood
- Appears to be a track and field but it may be privately owned by the school its on
- 10 schools within walkable distance
Lack of Health Resources

- Not many walking trails besides the Arboretum which is across busy road
- No public amenities such as playgrounds
- No connection to other green spaces due to a busy main road
- Lack of bike trails or paths
- Not a lot of open space in Roxbury
- No major grocery store in area
- Jamaica Plain considered a food desert
- No major sense of place
- Not scaled to the human at all
  - Can lead to less walking and outdoor activity as it is not incentivized
- Tree canopy on the site is lacking
- Stormwater management is poor
- Heat island effect is an issue
Site Research/Class Information Impacts

- Environmental Research
  - Flood Impact area
  - Heat Risk Zone
- Health Resources
  - Lack of health resources in neighborhood
- Neighborhood Demographic
  - Health habits
- Transportation Trends
- Mental Health Impact from Green space
- Social Impact from Green space
Washington St Elevation

Grocery Store

Pharmacy

Hardware Store

MBTA Bus Station/Community Green Roof

Community Park
Monitoring Plan

- Conduct interviews with locals every 6 months
  - Make sure everything is working as intended and if anything needs maintenance or repair
  - What about the green spaces are working and what is not?

- Ask residents of the health and support housing facility if they are able to enjoy the green roof over the MBTA
  - How often do they use it?
  - How do they feel before and after?
  - How easy is it to access and use?
Resources

- https://www.point2homes.com/US/Neighborhood/MA/Boston/Jamaica-Plain-Demographics.html
- https://www.point2homes.com/US/Neighborhood/MA/Boston/Roxbury-Demographics.html
- http://sites.tufts.edu/gis/files/2013/02/Lawrence_Kelly.pdf
- https://storymaps.arcgis.com/stories/1548beb5360e48648a43a595239fe3c5
- https://boston.maps.arcgis.com/apps/View/index.html?appid=7a599ab2ebad43d68adabc9a9ebea0e6&extent=-71.1583,42.2897,-70.9309,42.4060