AGENDA

- Introductions
- Planning Scope
- The 2004 Campus Plan and Survey
- Observations
- SWOT Exercise
- Analyze
- Goals and Advice
- Questions & Discussion
Ayers Saint Gross

PHILOSOPHY

We engage people and places to create designs that enrich the world.

1912

OFFICES

Baltimore, MD • Tempe, AZ • Washington, DC

CLIENTELE

90% of our work is for higher education institutions

STAFF

160

75% Professional Staff Members

of our Staff Members are LEED Accredited
A Commitment to Higher Education

intro:

Workshop-Based
Process structure around intensive campus engagement

Research-Informed
Active research on higher education trends since 1998

Scenario-Tested
Campus Capacities explored via multiple development scenarios
Six Focus Elements

Development Framework Plan
A review and analysis of existing planning efforts undertaken by the University since the adoption of the Campus Master Plan in 2004 will be completed. This will include the adopted and proposed District Plans, Vision 2020, current Academic Plans, current Strategic Plan(s), and other planning efforts.

Circulation & Transportation Plan
The planning effort will evaluate current campus access and circulation along with projected scenarios based on potential growth. Emphasis will be placed on the pedestrian experience along with campus gateways, edge conditions, alternate mobility opportunities, future garage locations and connections to the community.

Sustainability Plan
Develop a set of sustainability guidelines that will inform the planning effort and the Development Framework Plan. Identify both planning and building best practices relevant to sustainability strategies. Incorporate standards into a set of Sustainability Guidelines.

Preservation & Adaptive Reuse Plan
Review the current list of heritage campus buildings to identify necessary additions or deletions, coordinated with facilities indicated for potential demolition in the 2004 Campus Master Plan and adopted District Plans. The current Heritage Building Guidelines will be reviewed and recommendations made for revisions.

Signage Plan
Develop a signage and wayfinding master plan. This effort will focus on developing a breakdown of where wayfinding is needed and the development of new signage standards for the university. The wayfinding system includes directional, identification, and orientation signs to facilitate campus navigation and identity.

Design & Landscape Guidelines
Review and recommend additions, deletions or modifications to the current 2004 Campus Master Plan guidelines for architectural and landscape components.
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Review and recommend additions, deletions or modifications to the current 2004 Campus Master Plan guidelines for architectural and landscape components.
Engagement

**Scope:**

**Orchestrate**
- Co-Chairs: Dr. Jorge Vanegas, Ms. Lilia Gonzales

**Direct & Advise**
- Executive Committee:
  - President
  - Provost
  - VP for Finance & Administration
- Advisory Committees:
  - Council of Deans
  - Council on the Built Environment
- Focus Groups:
  - Multiple Entities
- Campus & Community:
  - Open Forums
  - Website

**Support**
- Information Requests:
  - University Architect
  - Transportation Services
  - UES
  - Student Affairs
  - Academics
Timeframe

**DEFINE + ASSESS**
- MONTH 1: Primary Workshops
- MONTH 2: Primary Reviews
- MONTH 3: Regular Meetings

**ENVISION + GUIDE**
- MONTH 4: Framework + Systems Analysis

**CAMPUS SCENARIO + CAPACITIES**
- MONTH 5: Campus Wide Analysis

**TEST**
- MONTH 6: Draft Campus Master Plan Update

**SYNTHESIZE**
- MONTH 7: Policies + Guidelines
- MONTH 8: Final Plan
2004:
The 2004 Civic Structure
The 2004 Landscape Plan
THE 2004 PLAN: SURVEY
Survey Instructions

2004:

Phone

Text ASGCAMPUS to 37607

Computer

Pollev.com/ASGCAMPUS
Goals of the Plan

1. Reinforce Campus Identity
Most of the positive physical contributions to campus identity are associated with the buildings, spaces, and sculptures of the east core of the campus. Campus identity should be reinforced by further positive contributions.

2. Reinforce Campus Community
The remarkable sense of community on campus is not reinforced by the physical setting. The physical setting should enhance and promote a greater sense of community. The campus should be a compact, cohesive environment in order to achieve this goal.

3. Establish Connectivity
Interdisciplinary activity is essential to research and knowledge today. Connectivity needs to be reestablished between places, between academic and research activities, between faculty and students, and between campus and the community.

4. Create Architecture that Contributes Positively to the Campus Community
Too many recent buildings are isolated objects that contribute little to the campus community. Buildings should be better neighbors through their siting, exterior design, interior public space design, and landscape. The renovation of existing buildings should consider and reinforce their relationship to the community.

5. Promote Spatial Equity & Appropriateness
Equitable spatial standards need to be developed, as well as a space allocation system that also considers the reuse of existing space. A comparative space analysis and an Academic Space Plan should serve as the basis for space allocation.

6. Establish an Accessible, Pedestrian Campus
The “population” of the campus is approximately 52,000 students, faculty, and staff. About 10,000 students live on campus. This means that approximately 42,000 people commute to campus—many by car. There are also numerous service vehicles, buses, and so on. The goal is to rationalize the circulation patterns, keep private cars to the periphery, and make the campus an accessible, pedestrian one.

7. Promote Sustainability
The campus has finite land and resources. The goal is to promote sustainability by teaching, planning, and acting in an environmentally sustainable manner.

8. Develop a Supportive Process
The aim is to develop a process that enables the attainment of the above goals in a transparent, inclusive, and efficient manner.
Reinforce Campus Identity: Was this goal successfully implemented since the 2004 plan?

- Yes: 6%
- Partially: 83%
- No: 8%
Reinforce Campus Identity: Is this goal still relevant and important?

Yes: 100%

Partially: 0%

No: 0%
Goals of the Plan

2004:

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Reinforce Campus Community: Was this goal successfully implemented since the 2004 plan?

- Yes: 9%
- Partially: 75%
- No: 17%
Reinforce Campus Community: Is this goal still relevant and important?

- Yes: 100%
- Partially: 0%
- No: 0%
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Establish Connectivity: Was this goal successfully implemented since the 2004 plan?

- Yes: 8%
- Partially: 58%
- No: 33%
Establish Connectivity: Is this goal still relevant and important?

- Yes: 100%
- Partially: 0%
- No: 0%
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Create Architecture that Contributes Positively to the Campus Community: Was this goal successfully implemented since the 2004 plan?

- Yes: 36%
- Partially: 55%
- No: 9%
Create Architecture that Contributes Positively to the Campus Community: Is this goal still relevant and important?
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Promote Spatial Equity & Appropriateness: Was this goal successfully implemented since the 2004 plan?

- Yes: 8%
- Partially: 25%
- No: 67%
Promote Spatial Equity & Appropriateness: Is this goal still relevant and important?

- Yes: 92%
- Partially: 8%
- No: 0%
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Establish an Accessible, Pedestrian Campus: Was this goal successfully implemented since the 2004 plan?

- Yes: 0%
- Partially: 70%
- No: 30%
Establish an Accessible, Pedestrian Campus: Is this goal still relevant and important?

- Yes: 83%
- Partially: 17%
- No: 0%
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82% Partially
18% No
Promote Sustainability: Is this goal still relevant and important?

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- No: 8%
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- Yes: 0%
- Partially: 73%
- No: 27%
Develop a Supportive Process: Is this goal still relevant and important?

- Yes: 91%
- Partially: 9%
- No: 0%
The District Plan Patchwork Quilt 2004:
Sustainability Topics

- Campus Character Zones
- Campus Edge Conditions
- Campus Mobility
  \((Transportation, Bicycle, Pedestrian, Parking)\)
- Campus Use Distribution
- Utilities
- Energy Consumption
- Stormwater Management
- Materials Management
- Green Space Network
observe: Campus Character Zones
Observe: Open Green Space
observe: Dense, Academic Core
observe: Suburban
observe: Underdeveloped
observe: Open Green Space
Campus Edge Conditions

observe:

- Vehicular
- Pedestrian
Roadways (Campus)
observe: Aggie Spirit (On-Campus Routes)
Pedestrian Walking Radius
Concentrated Pedestrian Zones
Campus Parking Locations
All Systems

ROADWAYS

CONCENTRATED PEDESTRIAN ZONES

PARKING LOCATIONS

SHUTTLE ROUTES

BICYCLE ROUTES

WALKING RADIUS
Use Distribution Overlay
observe: Roadways
observe:

Aggie Spirit (On-Campus Routes)
Existing and Proposed Bicycle Routes
CUP & SUP Locations

- Central Utility Plan
- Satellite Utility Plant
- Satellite Utility Plant (Proposed)
Energy Consumption

Campus Size vs Energy Consumption
Texas A&M University, College Station, Texas

Campus Square Footage

Energy consumption per GSF reduced by 42 percent with $180 million in purchased energy cost avoidance (from FY02 baseline through FY14)

Campus Energy Consumption

Fiscal Year

Total Campus GSF (million GSF)

Total Campus Energy Consumption (trillion Btu)
Energy Consumption

Energy Use Index (Energy Consumption per GSF)
Texas A&M University, College Station, Texas

$180 million cost avoidance realized over 12 years
(from FY02 baseline through FY14)

Achieved 42 percent energy consumption reduction per GSF since FY02

Goal is to reduce EUI an additional 16% over 5 year period
(from FY10 baseline)
Energy Consumption

Campus Size vs Greenhouse Gas Emissions
Texas A&M University, College Station, Texas

Reduced the GHG output of the campus by 29% while the campus grew by 11%
Stormwater Management – West Campus

- Gardens & Greenways Detention: volume 11.7 acre feet
- White Creek #1 Detention: volume 38.3 acre feet
- White Creek #2 Detention: volume 47.4 acre feet
- Research Park Detention: volume 65.6 acre feet
Stormwater Management – West Campus

- Gardens & Greenways Detention
  - Volume: 11.7 acre feet
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  - Volume: 38.3 acre feet
- White Creek #2 Detention
  - Volume: 47.4 acre feet
- Research Park Detention
  - Volume: 65.6 acre feet
Population & Space Growth

analyze:

- **PEOPLE**
  - +64,600 Students

- **PROGRAMS**
  - +400 Undergraduate & Graduate Degree Programs

- **PLACE**
  - +23 MM Gross Square Feet
ANALYZE
The 2004 Civic Structure
Expanding the Green Space Network
Expanding the Green Space Network
analyze: Expanding the Green Space Network
Texas A&M University defines “sustainability” as the efficient, deliberate and responsible preservation of environmental, social and economic resources to protect our earth for future generations of Texas Aggies, the Texas A&M community and beyond. The university defines “stewardship” as the act of conserving precious resources for a better future.

How does the Campus Master Plan Update connect with this definition?
2011-2015 Energy Action Plan

EAP 2015 has a goal to continue improving services while reducing energy consumption per square foot by 16 percent for the five year period of FY11 through FY15.

What happens in FY2016 and beyond?
1. Management of Climate Change
Greenhouse gas emissions, typically caused from the burning of fossil fuels such as coal, natural gas, and oil, is generally recognized as contributing to climate change. United States EPA has promulgated regulations associated with greenhouse gas emissions. Texas A&M University progress in this area is dependent on many of the other core components and will be interwoven throughout the Plan.

2. Purchasing of Sustainable Goods and Services
The University is committed to encouraging the purchase of renewable, reusable, recycled, locally produced and purchased and environmental preferable materials. These purchases help to prevent waste and pollution while stimulating the manufacture of more environmentally and socially sound products. Due to its size, Texas A&M University’s green purchases can have a significant environmental benefit.

3. Optimization of Energy Use
The great majority of energy is produced using non-renewable fossil fuels which emit greenhouse gases along with other pollutants. Increasing electricity conservation and efficiency and using sustainable sources for electricity generation are important steps to reducing pollution, increasing cost savings and promoting sustainable technologies for the future.

4. Sustainable Food and Dining
Food production and food transportation can have significant impacts to surface and groundwater, wildlife, atmosphere and human health. Additionally, dining services operations consume resources, generate waste and produce wastewater. Purchasing food from local producers reduces the transportation impacts while bolstering the local economy. Third-party certified food products, such as Certified Organic and Fair Trade, have environmental as well as social and economic benefits. Texas A&M University can help promote a sustainable food system and reduce waste through its dining services operation.

5. Management of Water Resources
Clean water is a limited and essential resource, especially in Texas. Managing water supply, wastewater treatment and surface water pollution is a growing concern. Many steps are available to Texas A&M University to conserve water, reduce wastewater treatment and protect surface water while reducing operational costs and satisfactorily meeting the demands of a growing campus.

6. Waste Management
Landfills consume a large area and land is a finite resource. According to U.S. EPA, over half of the waste stream in the United States is comprised of recyclable or compostable materials which can be diverted from landfills, protecting land and conserving natural resources.
7. **Sustainable Land Use**
Texas A&M University is a land-grant university with a 5,000-acre campus, containing a variety of open spaces, water resources, plant life and wildlife habitat. Sustainable stewardship over these resources will help protect the character of the campus as well as the ecological system in which it exists. In its implementation of the Campus Master Plan, the Design Review Board (DRB) should continue to serve as a key consultative body for ensuring the physical form of campus meets sustainability standards.

8. **Use of Green Building Practices**
According to the U.S. Green Building Council, buildings in the United States account for:

- 72% of electricity consumption,
- 38% of all carbon emissions,
- 40% of raw materials use,
- 30% of waste output (136 million tons annually), and
- 14% of potable water consumption.

Green building techniques reduce these environmental impacts as well as lower total cost of ownership. Furthermore, Green buildings promote a healthier environment for the building occupants. The Texas A&M University campus has over 21.5 million square feet of building space, therefore promoting sustainable building and renovation practices has the potential for significant cost savings and environmental benefits. To further our efforts in green building practices, the DRB website offers many resources about buildings, landscapes and site furnishings.

9. **Utilization of Alternative Transportation and Fuels**
Traditional transportation relies on non-renewable fossil fuels which emit air pollutants and consume natural resources. Developing alternative methods of transportation and increasing the use of zero-emission and low-emission vehicles reduces these environmental impacts. Additional social benefits are found in the reduction of traffic congestion, increased exercise from biking and walking, and decreased noise pollution.

10. **Improving Social and Economic Factors**
Social and economic aspects of sustainability have a broad scope, including public service, economic justice, diversity and cultural resources. Sustainability efforts in this area lead an organization to continually evaluate and incorporate, where feasible and practical, individual and societal needs including health and well-being, nutrition, education and cultural expression. As an example, Texas A&M University holds the "Big Event", the largest, one-day, student-run service project in the nation where students of Texas A&M University come together to volunteer on community service projects such as yard work, window washing, and painting for community members. Texas A&M University recognizes this importance by naming “Service” in its mission. Other aspects are interwoven into campus life and operations and are recognized in the Plan.
11. Education and Research
Education is one of the most effective tools for changing behavior, while research advances knowledge and discovery. Both are important to increasing sustainability. Texas A&M University has an important opportunity to align its vision of sustainability with the University's mission of teaching and research. Allowing students to apply sustainability in coursework and research can deepen their understanding and position Texas A&M University to meet a growing demand.

12. Management and Funding Support
The Office of Sustainability cannot implement the Plan without the necessary resources, staff and funding. Sufficient infrastructure in the sustainability program must be maintained in order to carry out its duties of promoting sustainability at Texas A&M University.
Action Items:

Management of Climate Change
• Develop a Climate Action Plan with associated greenhouse gas reduction targets

Purchasing of Sustainable Good and Services
• Increase the use of renewable, reusable, recycled, locally produced and purchased, and environmental preferable products

Optimization of Energy Use
• Reduce energy consumption per GSF by 5% per year
• Increase campus energy consumption efficiency by 20%
• Advocate for the increased usage of renewable energy by 5% of the University’s current energy supply

Sustainable Food & Dining
• Increase the use of locally grown and third party certified foods in Campus operated cafeterias to 20% of food purchases
• Reduce waste to landfills at Campus-operated cafeterias by 20%
• Increase the offering of diverse, healthy food options

Management of Water Resources
• Reduce Potable Water Consumption by 15% by 2015
• Manage storm water in a proactive and ecologically sensitive manner by integrating storm water management in campus planning and development

Waste Management
• Reduce waste to landfills by 20%
• Increase electronic waste recycling by 25%

Sustainable Land Use
• Promote sustainable land use practices through establishing policies and planning
2010 Sustainability MP – Action Items

**Action Items:**

**Use of Green Building Practices**
- Implement green building maintenance practices
- Integrate Sustainability Plan component green building goals for new campus buildings

**Utilization of Alternative Transportation and Fuels**
- Reduce emissions and/or fossil fuel use in fleet by 10%
- Increase the number of faculty, staff and students using alternative transportation methods by 25%

**Improving Social and Economic Factors**
- Be an invaluable asset in the community through economic and social sustainability programs
- Accountability: Establish structures, processes, and policies that hold all units accountable, and reward units and individuals for demonstrating their current standing, plans and progress in creating an environment where the diversity of individual identities and ideas are treated equitably in a climate *that fosters success and achievement by all.*

- Climate: Promote a positive and supportive climate by identifying aspects in the climate of individual units and the University which foster and/or impede a working and learning environment that fully recognizes, values, and integrates diversity in the pursuit of academic excellence.
- Equity: Integrate into the mission and goals for the University and units assurance that students, staff, and faculty (tenure and non-tenure track), regardless of identity, are all treated equitably.

**Education and Research**
- Demonstrate leadership in University sustainability through environmentally responsible education and research
- Raise students participation in and level of awareness of sustainability

**Management and Funding Support**
- Develop and cultivate the sustainability program to successfully implement University priorities and establish national recognition
- Promote Texas A&M sustainability programs
SWOT EXERCISE
**Exercise**

- **Strength:** Characteristics of the campus that provide an advantage over others.
- **Weakness:** Characteristics that place the campus at a disadvantage relative to others.
- **Opportunity:** Elements that the campus could exploit to its advantage.
- **Threat:** Elements in the environment that could cause trouble for the campus.
swot: Campus
PRECEDENT INSTITUTIONS
Sustainability Guidelines

University of Colorado, Colorado Springs
2012 Campus Master Plan

Smart Growth
• As the university grows, they plan to reduce their space needs by increasing the utilization of their classrooms.
• When new facilities are necessary, disturbed landscapes are identified as priority development sites in order to preserve native, undisturbed landscapes.
• If the campus clusters facilities together along the pedestrian spine, transportation can function most effectively.

Transportation
• Supporting alternative transportation
• Improvement of connections from bus stops to campus core by establishing more university used programs along the route
• Tap into proposed street car system
• Increase bicycles lanes and trails for greater mobility
• Reduce the number of vehicles travelled between campus destinations.
• Establish a transit spine and restrict daily traffic in this area.

Buildings
• All new buildings must meet LEED GOLD Standards and target 40% greater energy efficiency than ASHRAE 90.1.
• Emphasize energy efficiency retrofits in renovations as well.
• Choose transit-accessible building sites that avoid disturbing national resources and support optimal solar orientation.
• Reduce the demand for water
• Minimize Construction waste

Social
• Accommodating enrollment growth to continue to allow all Coloradoans access to higher education
• Encouraging community engagement through development of public facilities
• Establishing a network of communal indoor and outdoor spaces that allow a diverse body of students, faculty, and staff to interact.
• Planning for shared facilities and partnership models that offer additional funding opportunities
Operations, Energy and Carbon Offsets
• Expanding the existing reclaimed water system for irrigation;
• Recommending strategies for additional renewable energy such as expanding the south campus solar array and adding PV solar shades on future parking structures;

Smart Growth
• Increasing the density of the campus core;

Transportation
• Incorporating the transit spine and improved pedestrian paths and bikeways to reduce demand for parking;
• Replacing surface parking with perimeter parking structures;

Buildings
• Incorporating the campus standards requiring new buildings to achieve USGBC certification at LEED Silver or above

Landscape
• Reducing impermeable surfaces by replacing asphalt parking lots with landscaped open space and providing for storm water retention and management;
University of North Texas
2013 Campus Master Plan Update

Sustainability Guidelines

Operations, Energy and Carbon Offsets
- Sustainable efforts including solar panels, wind turbines, rainwater harvesting, etc.
- Conduct an energy audit of all buildings every 5 years and follow up with necessary repairs and upgrades
- Encourage behavioral change in students, faculty and staff with regard to air-conditioning and heating requirements
- Analyze life-cycle costs and energy usage when selecting building materials and systems
- Consider cost-benefit of investment in cutting-edge “green” design strategies

Smart Growth
- Compact development for increased building density, with more substantial buildings located on central campus sites
- Mixed-use and housing developments near campus edges, or along existing or proposed transit routes
- Student housing to be placed adjacent to student services, recreation, and other amenities
- Consolidated and shared resources and facilities
- Increased on-campus housing

Transportation
- Encourage increased transit infrastructure and operational efficiency
- Create more bicycle infrastructure (lanes and paths)
- Pedestrian connectivity and elimination of internal campus streets and surface parking lots
- Strategies to reduce surface lots and increased use of alternative transportation modalities

Buildings
- LEED Silver Requirement, and other “On-Campus” certificate programs
- Proposal to create a similar certificate for major renovations
- Guidelines and standards promoting better designed, properly-oriented, more efficient buildings
- Preservation and appropriate adaptive reuse of existing buildings}
University of North Texas
2013 Campus Master Plan Update

Landscape/Site
- Improvements to the pedestrian realm with more streets trees, improved sidewalks, and pedestrian scaled lighting
- Placemaking to encourage student to stay on campus
- Removing streets and surface parking lots to reduce impervious surfaces and stormwater runoff
- Storm water management emphasizing water retention and recycling water for irrigation use
- Landscape standards to reduce water consumption, need for pesticide/herbicides and support localized retention and filtration

Education/Outreach
- Improved education and awareness of sustainable practices
- We Mean Green Fund – similar to the AggieGreen Fund
Goals and Advice

- Create guidelines that address building material choices and performance criteria to support better thermal characteristics thereby reducing energy demands.

- Consider utilization of alternative energy particularly for specialty programs or exhibition opportunities (engineering, agriculture and research park could/should have cool applications)

- The landscape guidelines that develop more plant based solutions as well as planting guidance to reduce water consumption, etc.

- Identify zones of campus that may have distinct plant palettes.

- Building transitional elements like arcades for defining exterior spaces to augment interior spaces.

- Stormwater mitigation through less paved/more permeable site development.

- Devices for measuring energy and water resources integrated into key projects - like housing to demonstrate use profiles and long term reductions.

- Benchmark current campus usages now for future comparison to help determine long-term impacts after initiatives are in place. How existing infrastructure can be better utilized versus capacity increases.
Thank You

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