

FIRM PHILOSOPHY



Burt Hill has a strong record of successfully implementing environmentally sound and sustainable concepts that transcend master planning, architecture, engineering, and commissioning. We have long been a leader in the development of sustainable design strategies. Our trendsetting work in the 1970s with the Department of Energy helped define the movement towards the incorporation of passive and active solar designs into numerous building types.

As the first A/E member of the U.S. Green Building Council (USGBC), we have been closely involved with development of the original LEED standards. As contributors, we are intimately familiar with both the intentions and the implications of these standards as they relate to building design and the development of the built environment. Two of our principals – Dick Rittelmann, FAIA, and Harry Gordon, FAIA – have been United States Representatives to the International Energy Agency. Burt Hill has more than 60 LEED Accredited Professionals. From this large wealth of knowledge, we bring a thorough understanding of the importance and implementation of green / sustainable features. The application of sustainable design principles is a part of our basic design ethic.

Burt Hill has built an international reputation on incorporating innovation, energy efficiency, and sustainability into the design of all of our projects. For more than three decades, our staff has continually conducted research to heighten our understanding of the impact of new technologies on the built environment.

At the root of our sustainable design process and practices is the one important element that drives our staff – passion. We care about the impact of the design and building industry, understanding the far-reaching implications of our work and the way it can change the lives of humans and other species that share our planet. For that reason, we strive to make all of our decisions by considering the economic, social, and environmental consequences of each one.

PUBLICATIONS

Burt Hill's staff has a long history of publishing and lecturing on a wide range of issues related to sustainability. We are committed to publishable technical research. As a result of combining what we learn from our research into our design, we create facilities that are dynamic, energy-efficient, and healthy for a wide variety of users in technically demanding environments. Our recent published work includes:

- "Atrium Design Strategies for Daylighting and Natural Ventilation," GreenBuild: International Conference & Expo, 2003
- "High Temperature Fuel Cells: Combined Heat and Power Applications for Buildings," U.S. Environmental Protection Agency, 2003
- "Emerging Methods for Matching Distributed Generation Systems with Building Thermal Systems," U.S. Environmental Protection Agency, 2002

MASTER PLANNING

Members of the team are also contributors to sustainable design text books, which have been recognized with the prestigious U.S. National Progressive Architecture research awards, and a number of journals and magazines.

Burt Hill believes that any master plan must begin with the creation of a community vision based on the triple bottom line, a balance of people, prosperity, and planet. Sustainable developments must be equally responsive to social need, environmental responsibility, and economic vitality. They must embrace the heritage of the existing culture and celebrate its role as a community, marketplace, and ecosystem. This vision must be built on a foundation of shared values developed between developer, designer, and community.

Community Based Planning Process

The process employed by Burt Hill is one that is creative, energetic, and most of all inclusive and transparent. The initial phases of the master planning process can be broken down into three distinct tasks:

- Inventory the assets. Seeking to understand the essence of what makes this place unique, the planning team will catalog everything from the area's history to features relating to architecture, economy, environment, social fabric and infrastructure.
- Analyze the pattern. The planning team will develop an understanding of the significant changes that have transformed the land from an undisturbed ecosystem into an urban community.
- Synthesis. Through a series of community meetings, development principles to guide future planning and development will be identified based on the neighborhood's assets and development patterns.



Land Use

The creation of a sustainable neighborhood begins with a solid foundation of land use planning. The goals in creating this foundation include:

- Create a mixed-use pattern that promotes a live / work / play environment.
- Increase density in redeveloped portions of the project area.
- Equally distribute activity generators to enrich all neighborhoods.
- Enhance the sense of neighborhood identity.
- Create connections between revitalized neighborhoods and stable existing ones.
- Connect people to the natural assets of their community.
- Restore natural systems that have been interrupted by development in the past.



Concept developed for the award-winning Noisette Master Plan completed by BNIM Architects and Burt Hill

Zoning

As part of the master planning process, the "transect" and certain sustainable design principles organize and guide the use of the tools. The transect is a tool for analyzing and organizing the urban environment. When compared with conventional zoning, this approach is distinct in that it will:



- de-emphasize the separation of uses;
- emphasize the use of the form of buildings and public spaces to create vibrant, successful places where uses can change in support of market forces without great costs or disruption;
- focus on connections within natural systems that avoid the need for substantial capital improvements and achieve better performance of desired functions;
- create a distinctive setting for urban residents through the development of a community “identity;”
- examine the code issues to encourage regulation of SCALE in addition to USE;
- develop guidelines for STREETS and STREETSCAPE instead of SETBACKS and LOT SIZE MINIMUMS; and
- encourage DENSITY instead of promoting suburban sprawl patterns.

The organizing principles generate a dynamic tension between creating great human habitat through the creation of coherent pedestrian-oriented urban space and the creation of great human habitat through the introduction and integration of sustainable design elements.

Natural Systems

The open space and natural, scenic landscape of the neighborhoods will play a crucial role in the development of the proposed community. The proposed Conservation Program has the following elements:

- conservation easements on all common open space;
- deed restrictions and restrictive covenants over private lands;
- drainage easements and buffers;
- and trust;
- establishment of multi-use recreational trails and a highly flexible outdoor space; and
- establishment of a natural link between neighborhoods and the myriad of community destinations: schools, commercial areas, workplaces, and parks.

Transportation Systems

The goal of achieving a richly interconnected system of movement is crucial to a healthy community. Our freedom of choice and physical health depends on it. Using nature as a guide for transportation systems is discussed in terms of five principles:

- Design of Interconnectedness
- Design for Diversity
- Design for Adaptability
- Design for Multiple Uses
- Design for Celebration



The framework of our sustainable design process is based upon the premise by which we started, “Don’t design the transportation system and expect the community to adapt; instead envision the community you want to have, and

design the transportation plan to support this idea.” The end result of an Integrated Transit Plan will be a diverse and resilient system that evolves as the community grows. This system will not only be functional, but beautiful, engaging, and easy to understand. Other aspects of the our planning process will help integrate utilities for more efficiency, expand transit options to reduce car use and pollution, reduce and recycle waste, and build communication links to help connect the area with the rapidly changing future of the information age.

Utilities

One of the three cornerstones of sustainable design is stewardship of the planet’s resources. Utility and omnility systems are essentially resource harvesters and managers, and they influence usage patterns within their service areas with the types of programs they offer as well as the rates they charge. As good stewards of the environment, their priority will be to first implement strategies of resource reduction, then strategies of reuse. When those avenues have been exhausted, the use of services necessitating extraction of resources should be offered at a higher billable rate.

Ecosystems

Our planning process is based on restoring the ecological balance that existed for millennia before the arrival of European settlement. Goals include:

- restoration of a healthy watershed;
- reintroduction of native plants most suitable to the natural scheme for the promotion of biodiversity; and
- introduction of innovative features to control run-off, expand habitat, and integrate the natural world into the everyday life of residents.



Water Management Strategies

Our planning process focuses on four water management strategies:

- Stormwater collection and re-use
- Reduced water volume runoff
- Reduced rate of runoff
- Water quality enhancements

In addition, innovative sustainable design approaches will extend water solutions into design of the actual buildings (such as recycling rain water), discharging less waste water and less site run-off. The specific objectives of our water management strategies include:

- Meet or exceed requirements for volume and release rate management of stormwater.
- Exceed the volume management requirements by greatly reducing the volume of stormwater running off the land.
- Enhance the quality of stormwater leaving the property by reducing phosphorus, sediments, fertilizers, and other materials associated with developed land uses.
- Use natural systems rather than engineered systems to manage stormwater.

- Integrate the stormwater system into the plan, as habitat, passive recreational open space, etc.
- Treat stormwater as a resource, not a problem.

Water Management System

Features of the plan include things residents can do, like establishing backyard rain gardens, reusing collected rainwater, and reestablishing “bio-buffers” of native landscaping. Other aspects include converting drainage ditches to water-filtering bio-swales, minimizing impervious paved areas, integrating roadway buffers and median green-spaces, and allowing “reclaimed” marshlands to revert to their natural state.

ARCHITECTURE

Over the years, Burt Hill designers have perfected an intensive, interactive design process that allows us to effectively work with end-users to define their needs and translate them into working designs. Burt Hill teams typically stay onsite during these initial design sessions for a number of days. During this period, the team prepares and presents documentation of the results onsite for immediate client feedback, and creates opportunities for both formal and informal feedback. This approach allows us to fully understand our client’s needs, and helps build the strong project teams that are so important to the success of any building project.

ENGINEERING

There are many sustainable opportunities that are related to the engineering systems in a building; however, the realization of these engineering opportunities cannot occur in a vacuum. The most successful approach includes collaboration between the engineers and all other members of the project team including owners, users, maintenance staff, architects, construction managers, cost estimators, and community advocates. The engineers must become an integral partner of the sustainability team and work together to reach the ultimate goals of building responsibly and conserving natural resources.



Burt Hill provided engineering and sustainable design services for the David L. Lawrence Convention Center – the largest LEED Gold certified building in the U.S.

Early participation initiates the creative engineering process, and continuous interaction helps to foster the successful implementation. Exploration of energy saving opportunities in conjunction with enhanced environmental quality is a primary focus for the engineering approach. Energy modeling during the early phase of the design process is paramount to this exploration and will inform all stakeholders of the value of each opportunity. Analytical techniques are the primary method utilized by Burt Hill engineers, however other techniques including product demonstrations and case studies of operational systems have proved useful in justifying a particular approach.

The engineering involvement does not end at the completion of the design; rather, it continues through the construction and successful execution of the sustainable concepts. Education is an important aspect of the implementation process. Contractors must become familiar with the sustainable goals and help to realize the full potential of each opportunity. Burt Hill’s engineers participate during the construction process, informing the contractors, supervising installation, responding to execution hurdles and assisting with the setup of the systems throughout the facility.

COMMISSIONING

The commissioning effort is an essential component of the quality control measures during the construction phase. Throughout construction, Burt Hill engineers work hand-in-hand with the contractors to ensure that systems and equipment are installed and operating as the design intended. Burt Hill provides installation checklists that are to be filled out by the installing contractor. These checklists are verified by our engineers during frequent site visits. In addition to the verifications, Burt Hill engineers focus on the coordination and workmanship of construction. Once proper installation is confirmed, extensive testing of control sequences and parameters is conducted. These procedures ensure that the equipment and systems are operating optimally.

As part of the commissioning process, owner operator training is dealt with very seriously. Again, education is an important aspect in the sustainability of the design after construction has been completed. It doesn't matter how well a system has been designed or installed if the operator does not know how to properly maintain and operate that system. Burt Hill works closely with both the owner's personnel and the contractors to produce training sessions that are tailored to the specific needs of the operator. Operation and maintenance manuals are scrutinized to ensure the operating staff is left with the essential tools to perform their tasks.