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Case Study #1: Miami 21, Smart Code

1.0. Background

Miami adopted form-based codes as a means of making the city more sustainable and preserve the character of the neighborhoods while allowing growth and evolution. The biggest challenge for the city was to strike balance between the part of the city that were dense or were regulated to become dense and the single-family neighborhoods while looking at establishing the nodal growth pattern along established corridors.

An approach of developing a comprehensive plan was adopted with a purpose to address variations in that the city offered. The Miami codes established the following:

- Building form Standards
- Public space standards
- Architectural standards
- Frontage Standards
- General Landscape standards

The code chose not to regulate building types directly as the purpose was to regulate private realm up to a point where it will produce a good public realm.

Structure of the code

Each section of the Miami 21 Code is called Article and the overall code is organized under eight articles as below. It establishes standards and procedures for new development or redevelopment in the City.

- Article 1: Definitions of Terms and Uses defines key terms in the Code in three sections: definitions of building function use, definitions of terms and definitions of signs.
- Article 2: General Provisions contains information on the legal framework of the Code, including its intent and purpose and the Miami 21 Transect principles for settlement patterns that guide the Code.
- Article 3: General to all Zones introduces the Transect Zones as the structure for requirements related to Density and Intensity, provides guidance for phasing, Lots and Frontages, Density Calculations, Height, off-street Parking and Loading, Sustainability, public Thoroughfares and Frontages, Special Area Plans, Historic Preservation, Waterfront Standards and the Public Benefits Program.
- Article 4: Standards Tables illustrates the components of the Code such as Intensity and parking requirements per Transect Zone.
- Article 5: Specific to Zones establishes the Transect Zones and the regulations that apply within each Transect Zone. Uses and development standards for each Transect are specified.
- Article 6: Supplemental Regulations sets forth regulations that apply to specific Uses in addition to the general regulations and Transect regulations set forth in other Articles.
- Article 7: Procedures and Nonconformities sets out the rules for applying the Code and addressing conflicts.
- Article 8: Thoroughfares sets forth guidelines and definitions for public Thoroughfares, as well as a catalogue of Thoroughfares appropriate to various Transect Zones.

2.0 Organizing principle

The Miami 21 smart code adopted transect as the organizing principle for addressing the complexity of physical size and use needed in the city.

3.0 Planning Context
The Miami code included the following to ensure that the development is contextual:

- **Abutting T-Zone transitions**: This section addressed the issue of transition from more intense zones to primary single-family zones through building form standards.
- **Floor Plate Maximums**: This section addresses the floor plate permissibility for infill residential and commercial developments.
- **Regulation by Net Lot area and Gross floor area versus Gross lot area and Net Floor area**: This section was introduced to regulate the calculation of FAR for various developments within the city.
- **Trees required in front yard**: This section elaborates on the minimum requirement of trees in front yard of any building w.r.t. reduce solar heat gain.
- **Parking requirement reduced near TOD**: This section was created to incentivize development around transit by reducing parking requirements.

c) Building form standards draft

d) Public participation: Miami 21 FBC undertook an extensive formal public participation approach over a period of plan development in the form of open houses, workshops, public presentations etc. However, throughout the evolution of the plan, the city officials constantly interacted with the stakeholders like property owners, architects, attorneys etc. to address the issues of the code. The key differences between the conventional codes and Form-Based codes.

### 5.0 Administration

The code is administered by the city planning authority. The Planning agency is most involved in development and evolution of the code.

### 6.0 Learnings

- The city Planning authority is the anchor agency for the undertaking the development and evolution of the code. They were also responsible for engaging all other relevant stakeholders.
- The development code ensured that contextual requirements are included and emphasized within the code. It offered elaborate urban design development code.
- Public participation is integral part of the process at various stages. Hence, public participation and involvement becomes important.
- The focus was to develop quality public realm.
- This code gives the application at area level.
Case Study #2: Heart of Peoria land development code

1.0 Background

The city of Peoria had developed a vision plan that included the recommendation for more detailed planning work for designated redevelopment areas. To realize the recommendation, the city council established Heat of Peoria commission. The scope was to develop zoning ordinance for core area into a unified code.

Structure of the code

The code was developed for four sub areas in the historic core of the city. It followed two approaches:

- Concision using imagery for easy understanding of the code and
- Integration of the Form based zones (form districts) in the conventional code that required careful demarcation of form-based zone. These zones were integrated into convention codes as an update.

2.0 Organizing principle

The code adopted frontages as the organizing principle for addressing the interaction between buildings and public realm.

3.0 Planning Context

The vision plan and Form based code included the following to ensure that unique aspects of urban form of Peoria. The code also included the option for expansion of FBC area called the “Planned form district”.

- Revitalizing Pedestrian - Oriented commercial centers and corridors: This section was introduced to reinvigorate the neighborhood commercial centers and main streets as vibrant social centers.
- Utilizing unique aspect of the community: This section was included to introduce adaptive reuse of warehouse historic buildings.

4.0 FBC Approach

4.1 Review, Access, Plan and Design

The city planning authorities conducted series of workshops and public participation (residents and business community) for developing the urban design and form-based codes. An interdisciplinary team was assembled for taking up the task of redevelopment of historic core of the city. The vision plan was considered as a starting point. Physical urban design, traffic and transportation considerations, economic and market conditions were reviewed in greater detail.

4.2 Public Participation

Extensive public participation design charrettes were conducted to develop codes for four vision area that were called as “form districts”. The public consultations had representing citizens, businesses, property owners, commissions, city planning staff, elected members etc. as participants during design workshops that were held for developing the codes.

5.0 Administration

The city planning authority is the nodal agency for the code and was involved in the development and evolution of the code.

6.0 Learnings

- The code was developed for the historic core of the city and can also be looked at
as special area regulation. However, it provided the methodology which can be applied to the entire city.

- The city Planning authority is the anchor agency for the undertaking the development and implementation of the code.
- The development code ensured that contextual requirements are included and emphasized within the code.
- Public participation is integral part of the process at various stages.
- The focus was to develop integration of built form with public realm.
- This code gives the application at area level.
Case Study #3: Form Based Codes for mixed use infill, Sarasota County, Florida

1.0 Background

- Sarasota county’s undertook review of existing and proposed regulations and ordinances of 2050 vision plan to ascertain if it will enable implementation of higher densities in mixed-use developments in a largely suburban community.

Structure of the code

- The code was developed to fulfill the county’s goals of higher densities in mixed-use developments:
- Application to selected growth areas: where communities were interested to develop mixed use infill developments.
- In this each site is planned through Charrette based process for which there is prescribed handbook. The developers who agree to undertake the full Charrette process can adopt these form-based codes.
- County approved Design firms: The developers of the infill sites must choose from county approved Design firms for creating vision and regulating plans for their sites.
- Three-dimensional code graphics: Unlike other codes, this code included illustrations and building types in perspective diagrams along with photographs for easy understanding.

2.0 Organizing principle

The code adopted Transect zones, building types and street types as the organizing principle for regulating Infill development.

3.0 Planning Context

To ensure appropriate character of development the code included the following:

- A Variety of street types provided within the FBC: This section was introduced to provide standard designs of street types and building types with flexibility to modify.
- Block Standards: This section was included to introduce strict standards for block sizes as creation of scaled street network was one of the most critical factors especially for site without walkable street networks.
- Compatibility with existing adjacent development: This was introduced primarily to stitch perimeter suburban development to the infill development under question and gain community consent through public participation.
- New Storm water requirements: This section was included override the existing storm water management requirements which focus on fragmented retention basis as it was proving difficult to use and a deterrent in creating walkable neighborhoods.

4.0 FBC Approach

4.1 Review, Access, Plan and Design

- The Sarasota county comprehensive plan was the starting point for the code. It encourages higher densities in mixed-use developments and calls for reuse and development of vacant or underutilized commercial parcels as mixed-use neighborhoods.
- A new floating code was created which could be adopted only if the developer undertakes a full charrette-based planning process for infill sites.

4.2 Public Participation

- Two public processes underlie this code namely Sarasota 2050 visioning process and Sarasota participation design
charrettes. The adoption of this code followed normal process of legislation i.e. public workshops, planning commissions public hearings, and county commission adoption hearing.

5.0 Administration

Rezoning approval is given by the board of county commissioners and all other approvals are given by the county who is also administrator of the code.

6.0 Learnings

- The code was developed to operationalize the high density in mixed-use development goal as stated in the county’s comprehensive plan.
- The code focused on neighborhood level implementation while prioritizing site selection based on designated growth nodes from comprehensive plan.
- The city county is the anchor agency for granting approvals except for rezoning approval which is granted by Board of county commissioners.
- The development code ensured that contextual requirements are included and emphasized within the code.
- Public participation is integral part of the process at various stages.
Case Study #4: Chandigarh

1.0 Background

The city of Chandigarh was conceived immediately after India’s Independence in 1947 as a new capital city for east of Punjab. The intent was to create a new town that is symbolic of India’s freedom and a step into the future. Chandigarh was the first planned city of India after independence and the first city of India to adopt Form Based Codes approach for development especially the Capitol Complex and the City center. Today the city is known in the entire world for its Architectural and Planning controls. Besides, it has also inspired new cities like Naya Raipur in current context.

Structure of the code

The code or the Design guidelines was prepared for the entire city primarily to control the Architectural features of the development and how it interacts with the public realm.

2.0 Organizing principle

The code adopted Architectural controls as the organizing principle for addressing the quality of public realm.

3.0 Planning Context

- The development of the city was guided by the Master plan where the primary module of the city’s design was a Sector, a self-sufficient neighbourhood unit with having shops, school, health centers and places of recreations and worship. Every sector is introvert in character and permits only 4 vehicular entries into its interior. The central green of each Sector also stretches to the green of the next sector. Form Based codes were adopted for the city to maintain its Architectural character whereby they focused on detailing the following:
  - Architectural Controls: This was introduced to prescribe all the architectural features compulsory verandah, height, basements, façade, signages, construction systems, compulsory architectural features for commercial buildings (including offices, hotels, etc.), certain residential building etc.

4.0 FBC Approach

4.1 City Level Planning context

- The overall city master plan was developed keeping several considerations in view like gradient of land, suitable soil conditions for development overall location of the site.
  - Urban control in Chandigarh were designed to operate at three levels namely the city center, the periphery and at the neighborhood level. Elaborate thought was given to the traffic circulation of the city while including not just motorized vehicles but also Non-Motorized transport and pedestrian infrastructure. Hierarchy of traffic circulation was designed ranging from: arterial roads (V1), major boulevards (V2) sector definers (V3), shopping streets (V4), neighbourhood streets (V5), access lanes (V6) and pedestrian paths and cycle tracks (V7s and V8s).
  - Architectural controls are applicable specially to buildings to be built by private enterprise in special areas of architectural interest such as V-2 roads, V-4 roads, City Centre etc.
  - Open spaces and green areas were given due consideration while designing the city. At the city level, the open space consists of the
Leisure Valley and special gardens. At sector level, the open space constitutes the central green in each sector whereas open space at community level consist of parks around which clusters of houses are arranged. The smallest category of open space is the courtyards provided in each dwelling on the front and rear side.

4.2 Design Guidelines

- Number of mechanisms were conceived to curb undue individualism in the built environment, and development of private buildings in the city. These included architectural controls, frame controls and zoning controls in the city. The basic aim was to maintain uniformity in skyline, heights and the architectural character. Depending upon the size and location, each plot of land in the city is governed by the specific use and building volume that can be developed on it through ‘zoning restriction’. Minimum standards of light ventilation, living area and sanitation were setup.

5.0 Administration

The Department of Architecture in Chandigarh Administrations is the nodal agency for the code.

6.0 Learnings

- The code was developed for a new city and with an intent to strongly control the aesthetic of the city as well as each components of the city.
- The city administration is the anchor agency for the undertaking the development, implementation and maintenance of the code.
- The development code ensured that contextual requirements are included and emphasized within the code.
- Public participation was not part of this city development essentially because it was a new city in the making and the time it was conceived.
- The focus was to develop integration of built form with public realm.