AFRICENTRIC DESIGN GUIDELINES FOR THE AKOMA VILLAGE DEVELOPMENT 2022

*symbols on this page depict the Principles of Nguzo Saba

ACKNOWLEDGEMENTS

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Land Acknowledgement

We would like to acknowledge that Halifax Regional Municipality, including the lands on which the Akoma Village will develop, are in the Sipekni ' katik and Eskikewa ' kik districts of Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People. This territory is covered by the "Treaties of Peace and Friendship" which Mi'kmaq and Wolastoqiyik (Maliseet) people first signed with the British Crown in 1725. The treaties did not deal with surrender of lands and resources but in fact recognized Mi'kmaq and Wolastoqiyik (Maliseet) title and established the rules for what was to be an ongoing relationship between nations.

Acknowledgement of Trans-Atlantic Slave Trade and Slavery

We would like to acknowledge all Treaty peoples – including those who came here as settlers – as migrants either in this generation or in generations past - and those of us who came here involuntarily, particularly those brought to these lands as a result of the Trans-Atlantic Slave Trade and Slavery. We pay tribute to those ancestors of African origin and descent.

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1. Introduction

Akoma Village is a multi-phased community plan in Dartmouth, Nova Scotia developed by and for the African Nova Scotian (ANS) people by the property holder Akoma Holdings Inc. (Akoma). Akoma Village represents the unique opportunity to create a world-class Black-led development, as well as a model of how a Black-centred community should look, feel and represent to Black people and the world.

Background

Located in Preston Township, Akoma Village stands on a unique and proud history and legacy. The site is highly significant to the African Nova Scotian community as it includes the location of the former Nova Scotia Home for Coloured Children (NSHCC) - see image above. The NSHCC opened on June 6, 1921, to provide care for orphaned and homeless African Nova Scotia children who were not permitted in white institutions due to racism and segregation. The NSHCC also housed the first and only African Nova Scotian bank, The George Washington Carver Credit Union. It should also be noted that farming and agriculture also provided an important means for economic development for the NSHCC.

Although not acknowledged at the time, the founding members of the former NSHCC had adopted an Africentric approach to their development by

following the seven principles of Nguzo Saba, most commonly known as the principles of Kwanzaa.

1) Purpose
2) Faith
3) Creativity
4) Unity
5) Self-Determination
6) Collective Work and Responsibility; and
7) Cooperative Economics

These seven principles were key to the success in establishing and operating the former NSHCC, in an era when racism, segregation, poverty and government neglect defined the order of the day.

The Africentric approach adopted by the founding members of the former NSHCC proved useful for one hundred years and is one of the guiding philosophies of the ANS community. As such, Akoma has continued the legacy of Africentricity and created a set of Africentric Design Guidelines to ensure the success and stewardship of the proposed Akoma Village Development and achieve an appropriate design for an ANS focused community.

This Report has been prepared by the Consultant Team after a robust research and consultation process, including desk research, interviews with subject matter experts, (See Appendix D) a site visit in December, 2021, and ongoing meetings and communications with the team at Akoma.

2. Overview of Africentric Design Guidelines

A primary objective of the Akoma Village Africentric Design Guidelines (ADG) is to provide clarity and yet maintain flexibility in creating building designs and development layouts that reflect the goal and vision that the Akoma Village to be rooted in the ideology and practise of Africentricity. The ADG is focused on the role buildings and landscape design play in creating and animating the public realm and marking the character and identity of an area. It is assumed that all development will conform to the appropriate Halifax Regional Municipality Design Guidelines, as well as Africentric Design Guidelines.

Definition of Africentricity/Afrocentricity

Afrocentrism places Africa at the center of African people's world, while stressing all people's entitlement to practices and celebrate their own culture, as long as it does not interfere with collective well being.

Mazama, A. (2003).
The Afrocentric paradigm. Trenton, NJ: *Africa World Press. pg* 6.

Application to the Built Environment

The application of Africentricity to the design and development of the built environment affirms that centering the African Nova Scotian community will make a positive contribution to the quality of life and success of this resilient yet underserved population. The ADG are based on the following principles:

i) enhance the quality of the built environment for African Nova Scotians through improved spatial relationships, design and materials that reflect the history, values and culture of the community.

ii) adopt a community-centred design, Black urbanism and Black placemaking approach to idea generation and decision making.

iii) establish harmonious spatial relationships between multiple housing types - community, affordable, supportive, market-rate, and rental housing across the development.

iv) prioritise the creation of a ANS 'commons' with inclusive public spaces, recreation opportunities, open landscapes, parks, trails and gardens that:

- Emphasise the importance of the pedestrian experience and multiple forms of active mobility, particular for seniors and those with disabilities,
- Create space for public art, civic monuments and creative placemaking experiences,
- Draw on the environmental history, including horticulture and agriculture practices, of the ANS community.

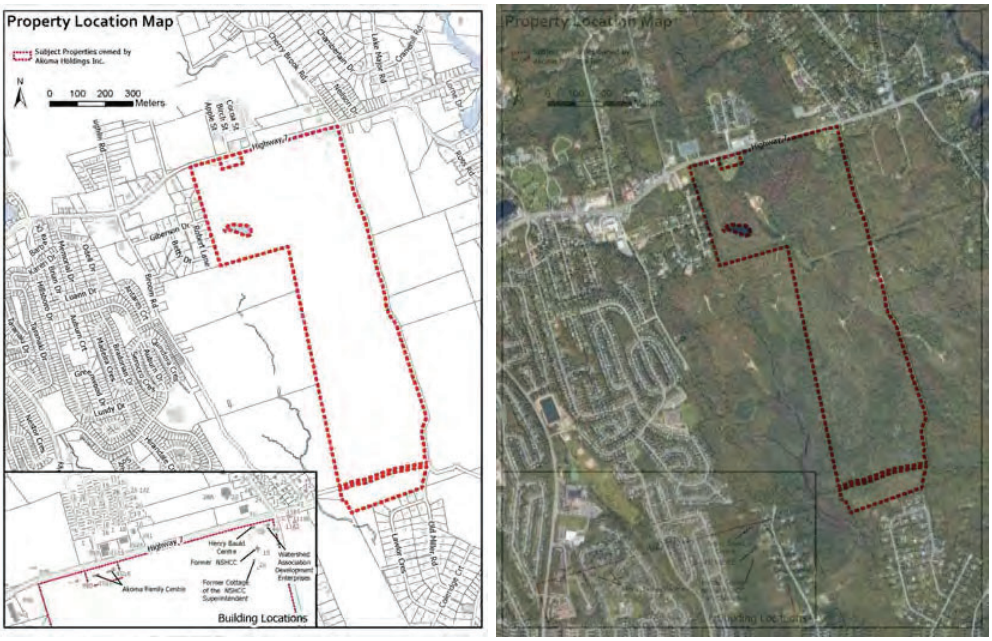
v) affirm that there is no one, monolithic "African" design type that need be transposed onto the Akoma development. Rather, architecture and design across the African continent are directly related to and influenced by the specificities of culture, climate, and geography of the specific group that it is serving, as well as the resources that are readily available. Therefore, the source for Akoma's Africentric design decisions are to be rooted in the

material culture, practices and affinities of the African Nova Scotian community, as well as their lineage in the Atlantic region of Nova Scotia and ancestral connection to the African continent.

vi) provide best practices examples and Africentric guidance to stakeholders, in particular land developers, planners, urban designers, architects, landscape architects and City staff in the creation and evaluation of developments for the Akoma Village.

3. Context

3.1 Existing Site



Property Location Map provide by Akoma Holdings (left) and site outline superimposed on aerial satellite photograph, Google Maps (right)

The 320 acre site is owned by Akoma Holdings Inc and located in Preston Township, a historic Black community in Westphal (Dartmouth), Nova Scotia. The first phase of development is underway - the former NSHCC is currently being renovated to enable a mix of housing, economic and recreational opportunities for the community.

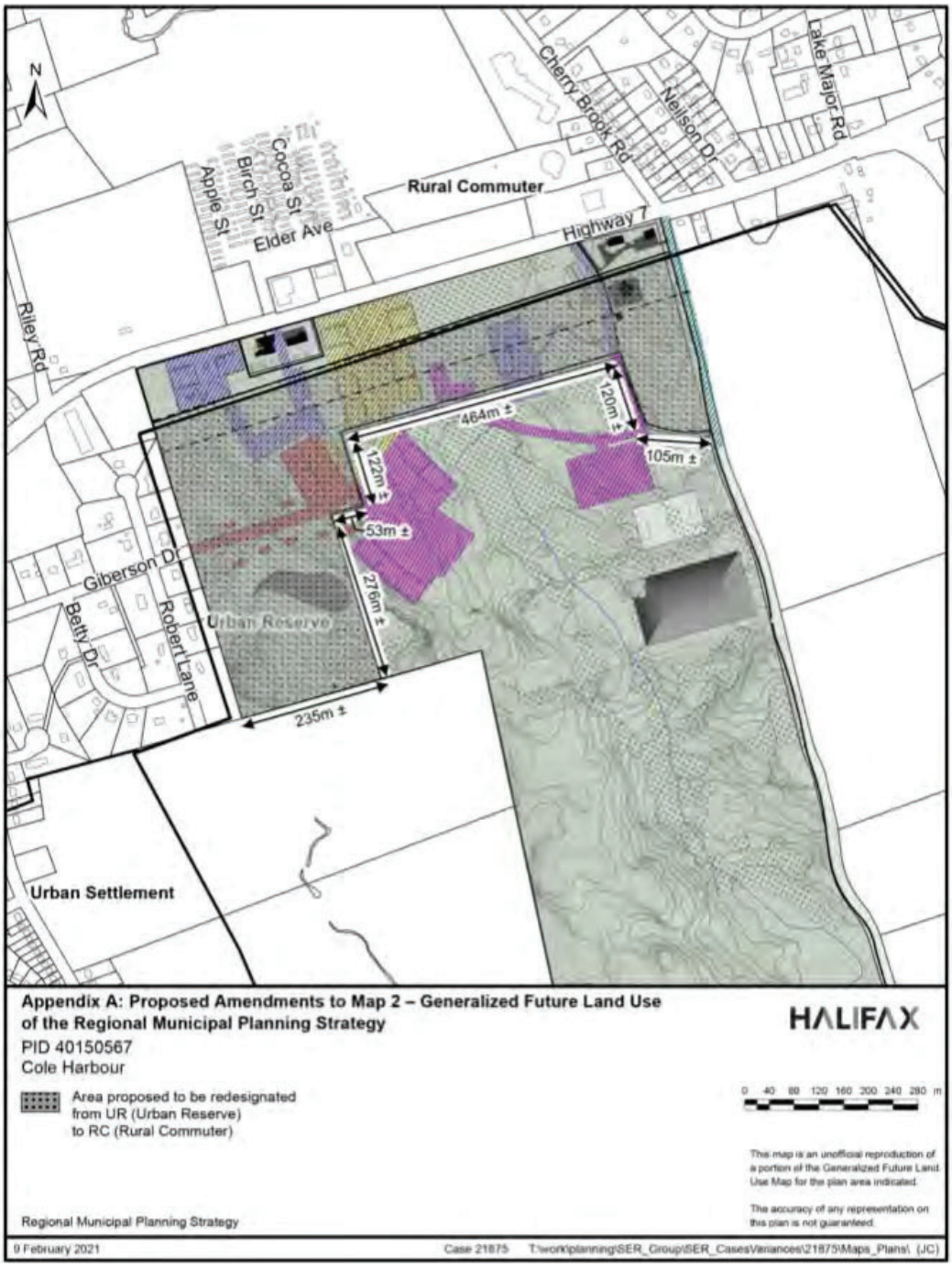
Buildings that exist on the site include:

A. Former NSHCC building that is being restored to an intergenerational facility for community use that includes offices, café, hair salon & spa and other amenities.
B. Former cottage of the NSHCC's superintendent at 20 Wilfred Jackson Way, which is currently used for storage;
C. Henry Bauld Centre at 35 Wilfred Jackson Way, which was previously a school house for residents of the NSHCC but now used as a community centre;
D. The Bauld Annex formerly known as the Watershed Association Development Enterprises (WADE) building at 49 Wilfred Jackson Way and,
E. Two residential care group homes for children in the care of the Minister of Community Services.

Akoma received approval from the Halifax Regional Municipality Council to rezone a portion of the property in May 2021, see section 3.2 Approved Re-Zoning Plan. This will enable the first phase of redevelopment to take place which will include a proposal for a residential building with a new children's centre, a seniors' building, and two mixed-income residential buildings.

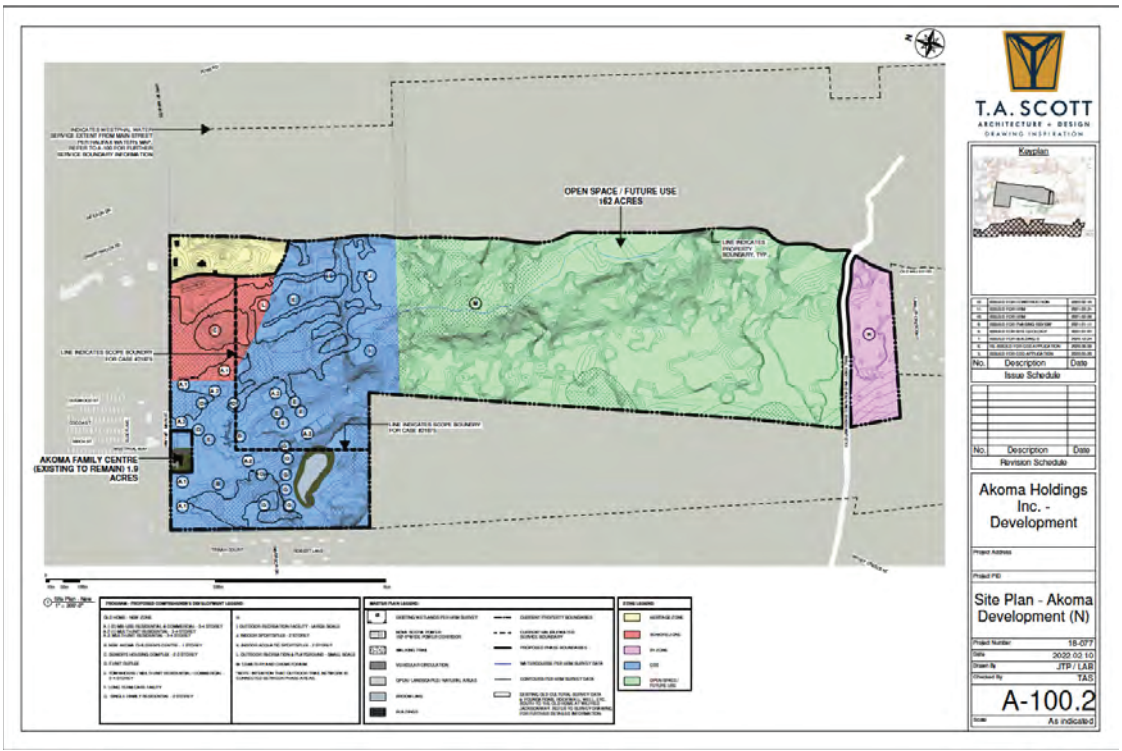
In addition to section 3.2 Approved Re-Zoning Plan, see also section 3.3, Proposed Master Plan, which indicates the full ambition of the site. In this report building and program types which are referenced in 3.3 are addressed, in order to account for the full ambition of Akoma.

3.2 Approved Re-Zoning Plan



Approved Re-Zoning Plan, Dated February 9, 2021. See also Appendix A.

3.3 Proposed Master Plan



Proposed Master Plan, showing ambition for full breath of site. Dated Feb 10, 2020. See Also Appendix B.

3.4 Relevant Planning Policies

The Africentric Design Guidelines are informed by an overview and analysis of relevant planning documents and policies, site tours, selected case studies and a review of best practices. These include, but are not limited to:

- Municipal Planning Strategy for Cole Harbour/Westphal (amended to September 2018)
- Cole Harbour/Westphal Land Use By-Law Part 15A: MOD (Mixed Opportunity District) Zone
- Halifax Regional Municipal Design Guidelines 2021 Part A: Design Guidelines and Standards

This review has brought to light a number of key issues, that require particular attention when considering development proposals through the lens of Africentricity and the needs of the African Nova Scotian community:

15A.3.1 Minimum Lot Areas within the MOD Zone

In any MOD Zone, no development permit shall be issued for any residential use except in conformity with the following:

	Single Unit Dwellings	Two Unit Dwellings	Townhouse Dwellings	Multiple Unit Dwellings / Mixed Use Buildings
Minimum Lot Area	1,858 sq. m (20,000 sq. ft.) where each dwelling is serviced by an individual septic system or as required for on-site septic approval, whichever is greater; or 929 sq. m (10,000 sq. ft.) per unit where dwellings are serviced by a shared septic system or as required for on-site septic approval, whichever is greater	929 sq. m (10,000 sq. ft.) per unit or as required for on-site septic approval, whichever is greater	929 sq. m (10,000 sq. ft.) per unit or as required for on-site septic approval, whichever is greater	11,613 sq. m (125,000 sq. ft.) or as required for on-site septic approval, whichever is greater
Minimum Lot Frontage	30.5 m (100 ft.)			
Minimum Frontage per Unit		15.25 m (50 ft.)	6.1 m (20 ft.)	
Min. Front or Flankage Yard	6.1 m (20 ft.)			9.1 m (30 ft.)
Min. Rear or Side Yard	2.4 m (8 ft.)	3 m (10 ft.) or 0.0 ft. (0.0 m) from the side being common with another dwelling unit		½ the height of the building
Minimum Separation Distance Between Dwellings	4.8 m (16 ft.)	6.1 m (20 ft.)		The height of the building or as required under the National Building Code, whichever is greater
Max. Lot Coverage	35 percent of the lot or potential lot required under Section 15A.2.1			
Max. Height	10.7 m (35 ft.)		See Section 15A.3.2	See Section 15A.3.3

The Lot Areas dictated by 15A.3.1 are onerously large. These lot areas are in keeping with rural and suburban communities and not in keeping with the desired typology of the Akoma Village development. Lot Areas are based on the current requirement for each lot to treat and store its own sewage through a traditional septic system. The use of a traditional septic system for each lot should be challenged, as there are other solutions which would not

dictate large lot sizes. For example, the Municipal sewage system that services the community of Dartmouth terminates at the intersection of Main Street and Montague Road/Hillsboro Drive, a mere 1500m away. It would be an equitable action if the HRM prioritised extending the sewage system to Akoma Village Development.

There are also other sewage treatment systems that do not require as much land, and are ecologically friendly, that should be considered. For example, PT Water and Environment Canada has developed an Ecoflo Biofilter, which requires a significantly smaller footprint than standard septic tanks. Thus the need for large lots is diminished. AKOMA should also consider a larger scale system to address the community as a whole, such as PT Water and Environment Canada's Membrane Bioreactor, or equivalent. A system such as this can be built to service the entire community, while simultaneously minimising the environmental impact on the landscape. See Appendix B.

By considering alternate means of treating the community's wastewater, AKOMA can make a solid argument to HRM to reduce lot sizes, thus setting the groundwork for the possibility of a community-focused Africentric Village.

15A.3.2 Building Design

(d) Townhouse dwellings shall incorporate at least 2 of the following design elements:
(i) covered entrance with a canopy, awning, recess or similar design feature to provide weather protection;
(ii) projecting or recessed such as wall projections and indentations, offsets balconies, bay windows, cantilevered floors, cupolas, or dormers;
(iii) varying roof planes using gables, turrets, roof projections, variations in cornice lines, dormers, cupolas, belvederes or similar architectural features; or
(iv) mixed architectural features including varied cladding materials and features textures, window treatments, or changes in colour.

While the Building Design directive 15A.3.2 does provide some flexibility in having to only conform with two of the above four design elements, the obligation to incorporate architectural elements of European origin, drawing from the English Renaissance and Victorian Era, in subsections ii) and iii) namely bay windows, cupolas, dormers, turrets, belvedere, etc. is in direct conflict with Africentric Design Guidelines for the Akoma Village Development. These architectural elements are completely decorative in the

contemporary era, their original functions having long been replaced by modern building science (ie. providing adequate ventilation and the ability to add significant glazing to exterior walls and thereby maximise views). Their inclusion in contemporary architecture has become a device to reference and align new buildings with the history of colonial architecture in the region and create uniformity in the build environment. In contrast, Africentric Design Guidelines were developed to ensure the Akoma Village does not negate the material and visual culture of the African diaspora in the built environment. Conforming to the ornamental elements dictated in 15A.3.2 would effectively recreate and reinscribe the contested history of colonial architecture in the region and decenter the history, legacy and vision that Akoma Village is founded upon.

15A.3.3 Building Design

(d) Main entrances shall be covered with a canopy, awning, recess or similar design feature to provide weather protection;
(e) To mitigate the actual and perceived bulk of building massing, any street facing or private-shared-driveway-facing facades shall be designed through architectural elements to be visually broken into smaller parts using any 2 of the following:
(i) projecting or recessed such as wall projections and indentations, offsets balconies, bay windows, cantilevered floors, cupolas, or dormers;
(ii) varying roof planes using gables, turrets, roof projections, variations in cornice lines, dormers, cupolas, belvederes or similar architectural features; or
(iii)varied architectural including varied cladding materials features and textures, window treatments, or changes in colour.

Similar to the response to 15A.3.2, policy 15A.3.3 e) once again relies on architectural elements of European origin, drawing from the English Renaissance and Victorian Era in subsections i) and ii), namely bay windows, cupolas, dormers, turrets, etc. to accomplish a reduction in visual massing and also to create uniformity and continuity in the visual field of the built environment. As these decorative elements would mark the buildings of the Akoma Village as continuous with a colonial history of architecture in the region, Africentric Design Guidelines propose alternative strategies to accomplish a reduction in building mass for multi-unit dwellings, without the use of these particular architectural elements. One example is the use of clerestory windows which originated in ancient Egypt, have been adopted by

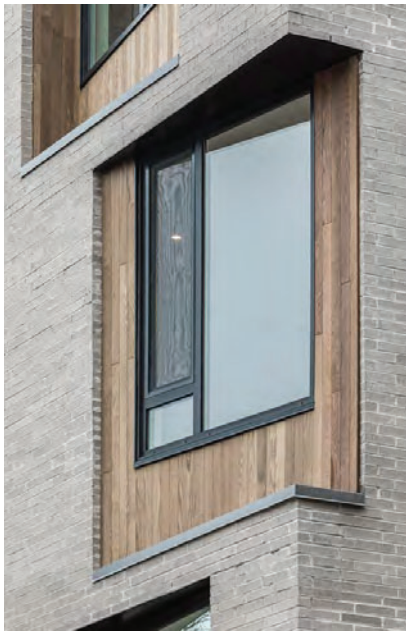
contemporary architecture and can lighten the perceived mass of roofscapes.

The Africentric Design Guidelines do however anticipate the strategic use of cladding, textures, or changes in colour as presented by subsection iii) 'varied architectural elements'. However, as the directive of 15A.3.3 is to use two of only three options, there is little flexibility for design strategies and innovation in this policy, despite the many architectural solutions to accomplish the stated goal of mitigating the appearance of building massing.

The following images present options in contemporary architecture that utilise creative treatments to exterior facades including windows, doors, roofs, etc, to break up massing through material and colour choices.

Credit: Superkűl Architects. Photo by: BenRahn /A-Frame.

Credit: Batay-Csorba Architects. Photos by: Doublespace Photography



Credit: Batay-Csorba Architects. Photos by: Doublespace Photography

Note: this building is in Halifax, NS. Credit: Omar Gandhi Architect Photo by: Doublespace Photography

Note that this building is in St John, NB, and is designed to international Passive House energy efficiency standards using mass timber, and is in construction. Credit: Acre Architects

Note that these buildings are located in Halifax, NS, and are currently in the permit phase. Credit: Acre Architects

15A.3.5 Other Requirements: Home Business and Home Office Uses

b) No more than 25 percent of the gross floor area shall be devoted to any business use, and in no case shall any business use occupy more than 27.9 sq. m (300 sq. ft.) of gross floor area;
g) No retail operation shall be permitted except where retail is accessory to a business use which involves the production of goods or crafts or the provision of a service.

Given the drastic and fundamental changes to the ways in which the workforce and the people of Canada have had to adapt to the COVID-19 pandemic, the limitations on home business and home office uses in 15A.3.5. reads as outdated and unnecessarily restrictive. In the ANS community, there is a long standing tradition of producing goods, crafts and services within the home, due in part to the restrictions to participation in mainstream economies either by policy or as a result of anti-Black racism. These traditions have continued to grow during the COVID-19 shift to home offices and business, as well as the continued legacy of a strong entrepreneurial drive in the community. Limiting home offices to a maximum of 27.9 sq. m (300 sq. ft.) of gross floor area (see subsection b) and restricting retail (subsection g) would curtail community based economy and unnecessarily limit ANS participation in the growing culture of working from home.

4. Africentric Design Guidelines

4.1 ANS- Oriented Residential Buildings & Amenities spaces

The Akoma Village development is slated to host a number of different building types. The long term vision, as illustrated by 3.3 Proposed Master Plan (see also Appendix B), demonstrates the ambition for multiple housing types. In order to create a vibrant community where ANS culture is celebrated and made present within the built fabric, the design of the buildings should adhere to some overarching ADG principles.

Proposed building types as referenced in 3.3 Proposed Master Plan, T.A. Scott Architecture and Design Ltd., See also Appendix B:

- Single family dwellings
- Townhouses/Duplexes/Multi-Unit Residential
- Low Rise Residential Buildings
- Mixed-Use Residential and Commercial

4.1.1 Ensure well-designed front entrances and front yards that present distinctive, ANS inspired facades, and enable "eyes on the street".

The design of residential building facades are an important part of the image and environment of the public realm in the Akoma Village development. The front entrance and front yard function is a point of focus, transitional space, and entry for each resident and visitor. In the ANS community they frequently serve as a space of identity, pride, welcome and community dialogue. Well-designed entrances and landscaping should help to establish the character for the building and surrounding neighbourhood, while passively enhancing the safety and sense of community. For all primary building entrances, provide:

4.1.1.1 A clearly visible and vibrantly coloured front door directly accessible from the sidewalk via a walkway.

4.1.1.2 Well-designed entrance features such as stoops, porches, shared landings, and canopies that provide weather protection, gathering places and enhance facades.

4.1.1.3 Transition from the public to private realm with architectural and landscape cues such as subtle changes in grade, materials,

decorative railings, paving materials and landscape plantings that reflect ANS material culture and horticulture practices.

4.1.1.4 Transparency in the front facade by way of windows, glazing and other means of creating visual connection with the public realm.

4.1.1.5 Materiality and patterning on the facade that reflect the ANS community's material culture practises.

EXAMPLES

Make It Right Foundation building proposals for affordable, energy efficient housing after Hurricane Katrina, for a predominantly African American community in NOLA, USA.

Note: while the built quality and longevity of these houses has been disputed by residents, the reference is only to highlight the contemporary take on a historical vernacular architecture and the ambition to provide affordable and sustainable models..

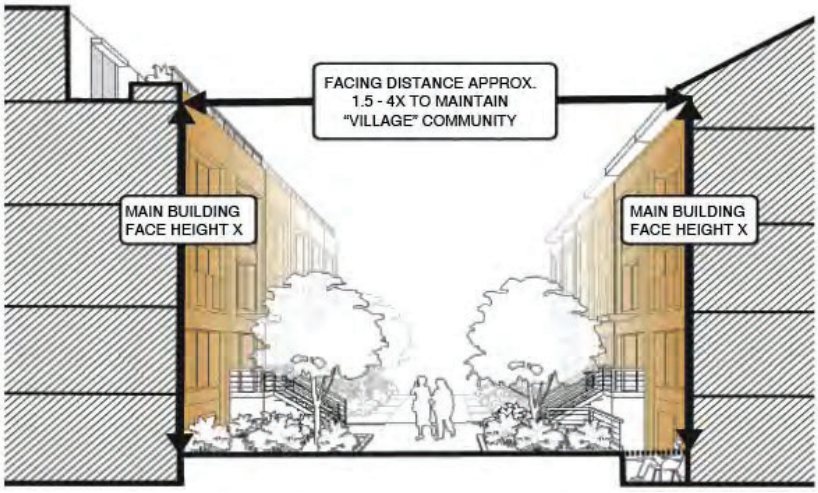
(L) Rendering of Africatown Plaza, a proposed seven-story mixed use development in Seattle, WA.
(R) Project Row House, facade treatment to traditional shotgun house in Houston, TX.

Historical shotgun houses, New Orleans, with playful, colourful facades.

Contemporary interpretation of traditional wood facade treatments, Villa Allmoge, Småland, SE 2020 by Andra Arkitekter

4.1.2 Scale the facing distance between residential buildings to enable a 'village experience' - shared spaces, community interaction and safe spaces for children and seniors.

Despite the large scale of the Akoma Development, provide appropriate and well-proportioned facing distances between buildings to create a framework conducive to a 'village' or tightly-knit community.



Building facing distance diagram showing approach to creating tightly-knit community.Source: City of Toronto Townhouse and Low-Rise Apartment Guidelines, 2018.

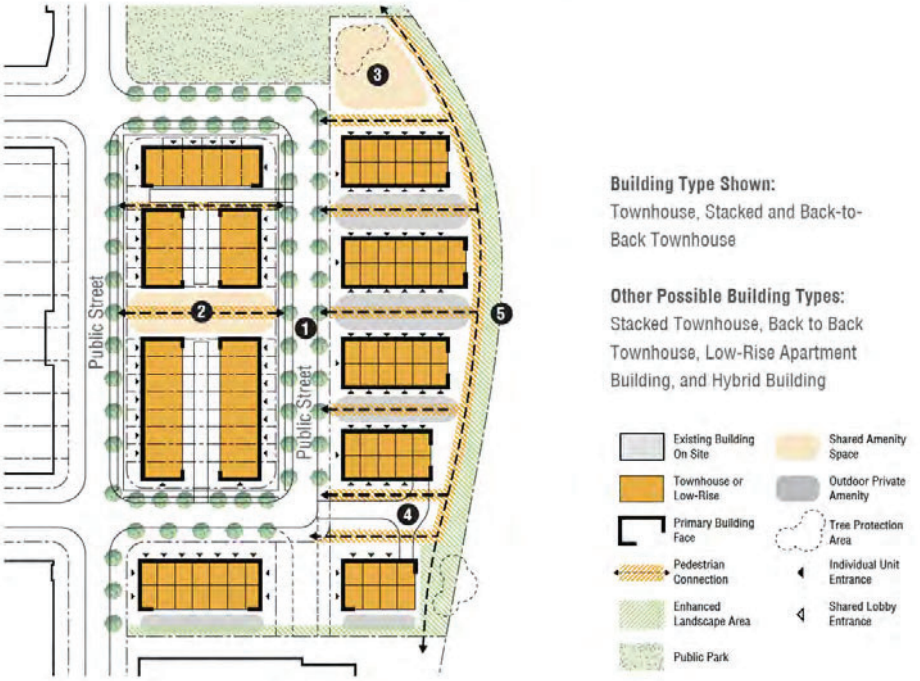


Diagram showing approach to creating tightly-knit community. Source: City of Toronto Townhouse and Low-Rise Apartment Guidelines, 2018.

4.1.3 Prioritise pedestrian and child-focused activities in the front of residential buildings. Whenever possible shift parking and municipal services, such as garbage pick up, to the rear of the site.

A commitment to the extended, intergenerational family is an important value in the ANS community and should be prioritised and enabled by the design of the Akoma Village. The front of residential buildings should be pedestrian focused, as well as a safe and welcoming environment for children, grandparents and extended families to congregate.

4.1.3.1 Provide parking for family homes at the rear of the building accessed via a lane or driveway able to accommodate municipal garbage pick up.

4.1.3.2 Parking facilities should be in the form of a multifunctional garage with connection to municipal services (when possible) through a laneway.

This scenario prioritises pedestrian and child-focused activities at the front of the home, maximises open space for gardens and trees and provides an infrastructure for ancillary buildings for storage, home businesses and other opportunities in the rear.

Diagram showing examples of a safe and welcoming environment for families to congregate. Source: City of Toronto Townhouse and Low-Rise Apartment Guidelines, 2018.

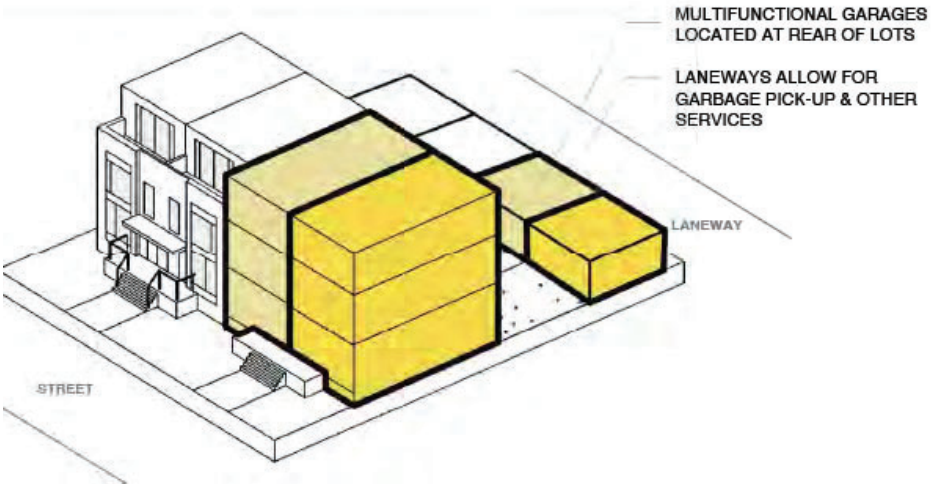


Diagram showing example of parking in multi-functional garages at rear of site adjacent to laneway. Source: City of Toronto Townhouse and Low-Rise Apartment Guidelines, 2018.

4.1.4 Consider the demographic and needs of the ANS community, in particular ageing members of the community. Meet and exceed requirements for accessibility in all residential housing. Integrate Universal Design standards throughout the development.[1]

Due to the higher proportion of the ANS community members with disabilities and mobility restrictions, exterior stairs and other grade changes should be minimised and avoided if possible.[2] All design elements should prevent and remove barriers faced by persons with disabilities and, conform and exceed the Accessibility Act (2017, c.2) and Schedule "C", 3.8 Accessibility Standards in the Nova Scotia Building Code.

4.1.4.1 Residential interiors should be designed with accessibility in mind at all times. Provide space for wheelchair turning allowances of 67" (1700 mm) diameter minimum within interior spaces, where possible.

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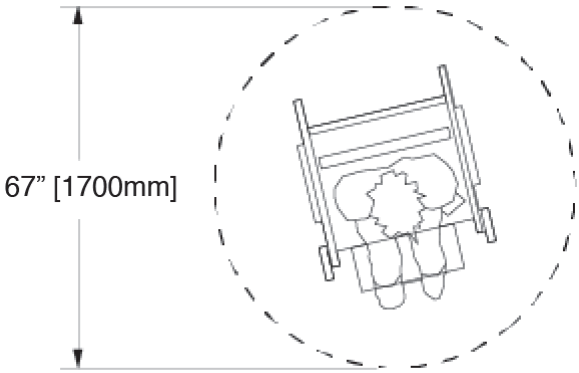
[1] Examples of Universal Design in housing design include: CMHC guidelines, https://www.cmhc-schl.gc.ca/en/professionals/industry-innovation-and-leadership/industry-expertise/accessible-adaptable-housing/universal-design-in-new-housing and Universal Design Canada's housing guidelines. https://universaldesign.ca/housing/, as well as Schedule "C"/3.8 Accessibility Standards, in the Nova Scotia Building Code ,https://novascotia.ca/just/regulations/regs/bcregs.htm#TOC1_17 .

[2] The May 2021 housing needs assessment completed by AKOMA for the ANS community identifies a higher proportion of households with a member with a disability compared to HRM as a whole, suggesting a need for housing options that include accessibility features and support services.



Wheelchair Turning Radius as per CSA Standards B651-12, Accessible design for the built environment, clause 4.1.

4.1.4.2 Follow all other accessibility standards as per Nova Scotia Building Code, Schedule “C”, 3.8 Accessibility. See Appendix E.

4.1.5 Treat multi-unit residential housing as destinations for communal activities and shared amenities. Consider bold and iconic facade treatments that signal the ANS community and utilise colours, imagery and symbols of the African diaspora.

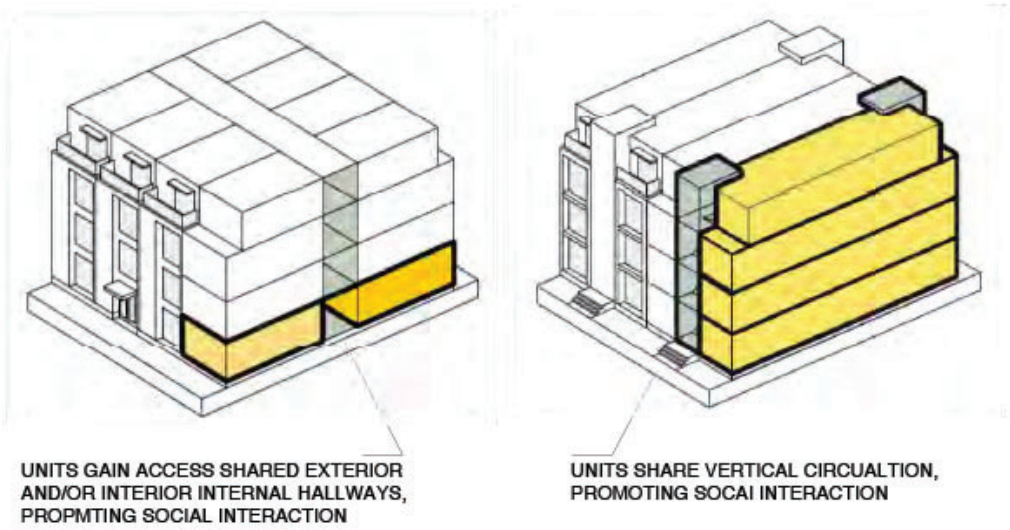
If thoughtfully designed the multi-residential building type can serve many ANS residents community by providing affordable housing options that enable community through shared spaces.

4.1.5.1 By consolidating and internalising unit entrances, the building frontage can be better designed to respond to local context and an Africentric character.

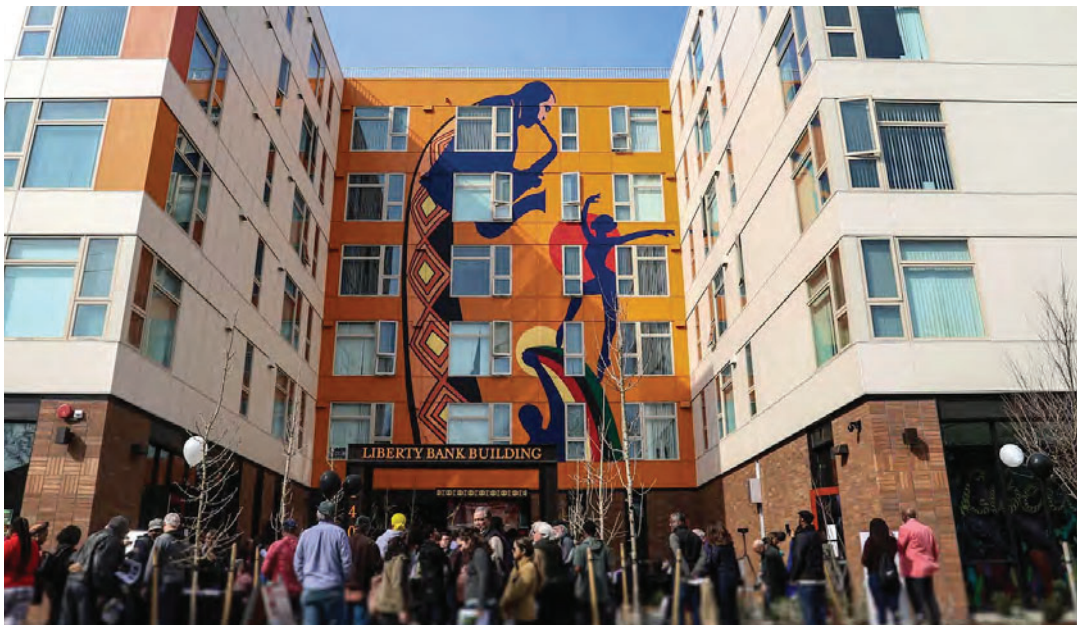
4.1.5.2 Building facades can be treated as surfaces to display colour, imagery and symbols of the ANS and African diaspora.

4.1.5.3 The visual appearance of massing can be diminished using fractal logic and patterning of which there is a strong tradition in African design.

4.1.5.4 Opportunities such as ANS owned commercial/retail on the ground floor may also be appropriate in certain areas and further serve residents.



Diagrams showing examples of consolidating and internalising unit entrances. Source: City of Toronto Townhouse and Low-Rise Apartment Guidelines, 2018.



Africatown redeveloped Liberty Bank Building Seattle, WA.

Credit: Sekou Cooke, Architect. Conceptual project, envisioning the transformation of a public housing site in Syracuse, New York through the use of historical imagery on buildings to directly reference the past.

4.2 ANS- Oriented Community Service Centres

The Akoma Village development is slated to host a number of different community service centres. These centres are sure to draw a populace from the larger ANS community in the surrounding townships and ANS townships further afield, as well as other communities in the Westphal / Dartmouth area. These building typologies provide an excellent opportunity to celebrate ANS culture and showcase it to the larger Nova Scotian community.

Proposed Community Service Centres as referenced in proposed Master Plan A100, T.A. Scott Architecture and Design Ltd., See Appendix B :

- Outdoor Recreation Facility - Large Scale
- Indoor Sportsplex - 2 Storey
- Indoor Aquatic Sportsplex - 2 Storey
- Outdoor Recreation & Playground - Small Scale
- Cemetery and Crematorium

4.2.1 Consider the Community Service Centres as a network of destinations, and share resources as appropriate.

4.2.1.1 Where possible, consolidate services for the Community Service Centres, such as parking and amenities such as washrooms and

change rooms. This will promote interactions between visitors to each facility, enhancing the village-like character.

4.2.2 Consider bold and iconic facade treatments that signal the ANS community and utilise colours, imagery and symbols of the African diaspora.

4.2.2.1 As with multi-unit residential housing, consider the facades of Community Service Centres as potential canvases for expressions of ANS culture. See recommendation 4.1.5 for examples.

4.3 ANS- Oriented Commercial Opportunities

The Akoma Village presents the opportunity to promote and nurture ANS-owned and led commercial endeavours, to serve the ANS community specifically and the broader community as a whole. This includes shops, restaurants, markets and other retail and employment opportunities.

4.3.1 Draw inspiration from African typologies of a circular gathering place lined by structures to organise retail and commercial activities, such as the boma or kraal.

Historically, many African communities would centralise goods and commercial activity, as well as community gathering in a roughly circular enclosure lined by structures. This served to not only organise retail and commercial activities, it was also associated with community decision making.[3] The image to the right is a depiction of

[3] See: https://en.wikipedia.org/wiki/Boma_(enclosure)

these spaces.[4] In keeping with this traditional African design, locate commercial buildings and the proposed Black Marketplace along a central gathering place. This typology will create a destination for Akoma Village pedestrians and visitors, allowing for informal and unplanned social interactions, and increasing the number of potential customers.

4.3.1.1 Organise the proposed Black Marketplace around a feature community gathering space to frame the edges of open space and create a spill-out space for events and festivals.

4.3.1.2 Typically community gathering spaces of this nature will have a high quality hardscaped surface.

4.3.1.3 Provide seating for informal gatherings.

4.3.1.4 Consider trees and other landscaping elements to provide shade and ornamentation.

Umbumbulu Village, South Africa. Designed by Ubuntu Design Group in collaboration with the local Zulu tribal authority, municipal representatives, a nonprofit organisation, and the local community

[4] Image credit: Zulu kraal near Umlazi, Natal. George French Angas - Look and learn, plate 27 from The Kafirs Illustrated, 1849.

Image of interior courtyard for social gathering. Tambacounda Hospital in Senegal. Manuel Herz Architects

4.4 Building Envelopes

Building envelopes offer a unique opportunity to explore and express ANS identity in the built environment. Carefully consider the architectural design and materials of buildings to enhance the quality of life and the public realm in Akoma Village. Reference the practices and affinities of the African Nova Scotian community as well as their lineage in the Atlantic region of Nova Scotia and ancestral connection to the African continent.

4.4.1 Vary the design and articulation of each building façade to provide visual interest and reflect Africentric traditions of patterning, colour, fractals, symbols and articulated surfaces.

4.4.1.1 Vary the design and articulation of each building façade to provide visual interest, break up massing and reference ANS and African material and visual culture.

4.4.1.2 Adjust internal layouts, glazing ratios, balcony placement, fenestration, and other aspects of the design to maximise passive solar gain, improve building energy performance, and reduce operating costs where possible.

4.4.1.3 Organise roof slopes so that they can accommodate photovoltaic panels, where possible,[5] to enable reduced building operating costs and carbon footprint.

4.4.1.4 Design entrances and shared landing areas with care and attention to detail. The use of sidelights, clerestory windows, and doors with glazing in entrance areas is encouraged.

4.4.1.5 Use attractively designed, high-quality railings. Rails also provide an opportunity to add graphic elements, patterns and symbols that reference ANS culture. Consider the railing material, transparency, pattern, and overall integration with building and landscape design.

4.4.1.6 Provide variations in architectural design between building blocks for multiple block developments to create a different but cohesive collection of buildings.

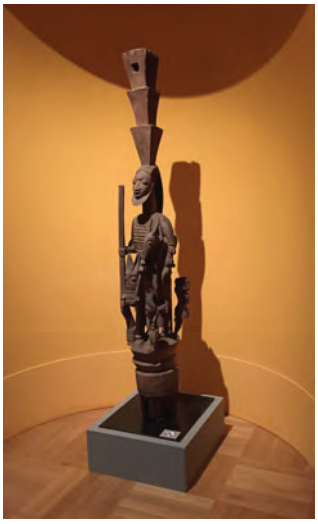
4.4.1.7 Use materials that are high-quality, durable, and wear well with age. Source local materials with low embodied energy where possible. Materials such as wood and stone are strongly encouraged as they have been used for housing by the ANS community for centuries.

PRECEDENTS OF AFRICAN MATERIAL CULTURE PROVIDING INSPIRATION FOR ARCHITECTURAL PATTERNING

Example of exterior tile patterns referencing hair patternings and fractal geometry.

[5] Nova Scotia is ranked the #1 province in Canada for installing a solar power system, scoring as one of the best provinces for rebates, financing options, and installation costs. https://www.energyhub.org/nova-scotia/

Example of architectural form referencing African head coverings. (R) Zulu Headdress (L) Alliance franco-sénégalaise, Ziguinchor



Example of architectural form referencing African sculpture. (R) The National Museum of African American History and Culture, in Washington DC. (L) wooden sculpture of a man wearing a crown by Yoruban artist Olowe of Ise.

Example of architectural form referencing African textiles, beadwork and fractal geometry. (L) Beaded Apron, Cameroon (R) Sarbalé Ke, Installation at Coachella by architect Francis Kéré.

EXAMPLES OF ANS MATERIAL CULTURE : PATTERN AND COLOUR INSPIRATION

Examples of patterning and design in ANS Quilting. Left: Quilt on display at the BCC. RIght: Vale Quilters Association members, from left, president Myla Borden, Shirley McKenzie, and Heather Cromwell; and BANNS co-founder and The Secret Codes curator, David Woods. Photo: Matthew Byard.

Examples of patterning and design in ANS Basket weaving. From top left: Clara Gough, baskets on display at the Black Cultural Centre, Dartmouth, NS. , portico with weaving detail in Lake Loon, NS, baskets casually displayed at the Beechville Church.

4.5 Landscape, Streetscape and Public Realm Design

Walking is fundamental to African cultures across the Continent[6] and should be a celebrated form of mobility in the Akoma Village, driving the design of the public realm. Safe streets, lanes, pedestrian mews and walkways are therefore fundamental site elements that should serve to organise and connect the Akoma Village. More than just circulation routes, they are place-making opportunities for the ANS community that can provide a sense of identity and allow community members to connect with each other. Interstitial spaces between buildings have the potential to be attractive, enjoyable, didactic and publicly-accessible environments that enhance the experience and quality of life of all future Akoma Village residents. A pedestrian oriented design is also in alignment with HRM Municipal Design Guidelines 2021 | Part A, section 2.1.3. And the "Pedestrians First" approach, as adopted in the HRM Centre Plan.

[6] In African cities, walking is the primary mode of transport with over 78% of people walking for travel every day. See UK Aid Walk21
https://walk21.com/2021/07/12/our-walking-is-our-asset-exploring-the-way-in-which-walking-is-valued-in-pedestrian-practice-and-policy-in-african-cities/
Image credit: Walking in the street on Lagos Island, Nigeria.©Walk21

4.5.1 Provide new streets, pedestrian mews and walkways for safe, comfortable and direct pedestrian access for all new buildings.

4.5.1.1 Provide high-quality and sustainable streetscape and landscape between buildings and adjacent streets, parks and open spaces to signal the ambition and importance of the Akoma Village development.

4.5.1.2 Utilise high quality pedestrian ground surfaces and include canopy trees, pedestrian scale lighting, as well as other amenities.

4.5.1.3 Consider carefully the names of these public spaces and leverage the opportunity to mark ANS history and culture in the built environment.

EXAMPLES

Example of residential pedestrian mew with high quality surfaces and green space. Low rise development on Walmer Road and Davenport, Toronto. Other examples include: Carnation Avenue, Etobicoke, and Garrison Village, Ottawa.

Example of urban streetscape with high quality hard surfaces signalling different uses, Mexico City, Mexico..

Example of car-free voetgangerszonens ("pedestrian zones") in a commercial, retail area of Delf, Netherlands.

4.6 Shared Outdoor Amenity Areas including Privately Owned Publicly Accessible Areas

The development of Akoma Village on the 320 acres owned by Akoma Holdings presents an opportunity to provide outdoor amenities for village residents and the wider community throughout Halifax-Dartmouth and Nova Scotia.

Types of outdoor shared amenities area may include:

Courtyards - landscaped open space, located in the centre of a single or consolidated block with potential for children's play space and no direct street frontage.

Plazas - animated gathering place with predominantly hard surfaced landscape features flanking a public street.

ANS themed Gardens - landscaped space open to a public street with predominantly soft landscaping and potential for children's play space and communal gardening.

Cemetery - an opportunity for a place of quiet reflection for pedestrians in the form of quiet and meditative walks.

Broom Lake - an opportunity for access to views, recreation, including four season activities, and gathering spaces for community events.

4.6.1 Consider all outdoor areas, including privately operated areas and floodplain areas, as opportunities for public use by the ANS community and others. Capitalise on the existing natural environment. Design shared outdoor amenity areas to be publicly accessible and a focal point within the Akoma Village development.

These shared outdoor spaces should:

4.6.1.1 Be located at grade and front onto streets, pedestrian mews, walkways, pathways and trails to provide visibility and access.

4.6.1.2 Be animated and framed with appropriate building massing and active uses (e.g. entrances and primary windows)

4.6.1.3 Be located centrally, in highly visible areas and accessible to all residents (particularly a children's play space). Avoid locating in isolated, inaccessible areas.

4.6.1.4 Preserve existing trees and topography wherever possible and incorporate them into the landscape design.

4.6.1.5 Maximise access to sunlight.

4.6.1.6 Maximise high-quality landscaped open space on the site. Opportunities may include hard/soft landscaped areas for passive recreation and children's play space.

4.6.1.7 Complement and connect with open spaces on neighbouring properties, where possible.

4.6.1.8 Provide support for outdoor activities such as seating, shade structures, children's play equipment and barbecues in a well-landscaped environment.

4.6.1.9 Be located away or screened with landscaping from parking, mechanical equipment and servicing areas.

EXAMPLES

Example of pedestrian walkway with landscaping and integrated gathering spaces around a public lake/body of water. Sève urban planning vision for downtown Sudbury by Collectif Escargo

Example of community gardens integrated with walking paths and bike trails to create open gathering spaces. Sève urban planning vision for downtown Sudbury by Collectif Escargo

Example of a public park built on the floodplains of the Don River. Corktown Commons by Michael Van Valkenburgh Associates.

4.7 Public Art

Public art enriches the public realm by making buildings and open spaces more interesting, engaging, and memorable. In the case of the Akoma Village public art is especially important for marking the ANS community in the built environment and creating didactic and passive knowledge sharing experiences with residents. In order to identify and secure the most effective locations and opportunities for public art, it should be considered early in the development and given priority.

Public art opportunities at the Akoma Village may include:

- A conceptual framework to organise open spaces including parks, plazas, setbacks, or streetscapes.
- An independent sculpture or two-dimensional work that marks an entryway, thresholds, corner, feature areas, or view terminus.
- A combination of visual arts with the building elements, including façades, canopies, floors, and lighting.
- Visual arts combined with landscape design including the functional and decorative elements of a site, such as water features, lighting, seating, paving, walls, fences, entrances and exits.

4.7.1 Pursue public art opportunities to enhance the quality of the development, especially the public realm, and mark the presence and history of the ANS community throughout AKOMA Village.

4.7.1.1 Integrate public art opportunities into landscaping and streetscaping to create character areas throughout the site.

4.7.1.2 Mark thresholds to the site and distinct neighbourhood areas with art works and imagery from the ANS community.

4.7.1.3 Consider embedding symbols, signage and imagery into pavement, ground treatments, fences, benches and other elements of the streetscape.

4.7.1.4 Consider a mural program for public facing facades, infrastructure, streetscapes, etc.

EXAMPLES

Example of three-dimensional public sculptures celebrating Africentirc principles and the Black body in public space. Above: *Within the Folds* (Dialogue 1), by Thomas J. Price.

Olamina, a "living sculpture" by the *Black Speculative Arts Movement Canada*.

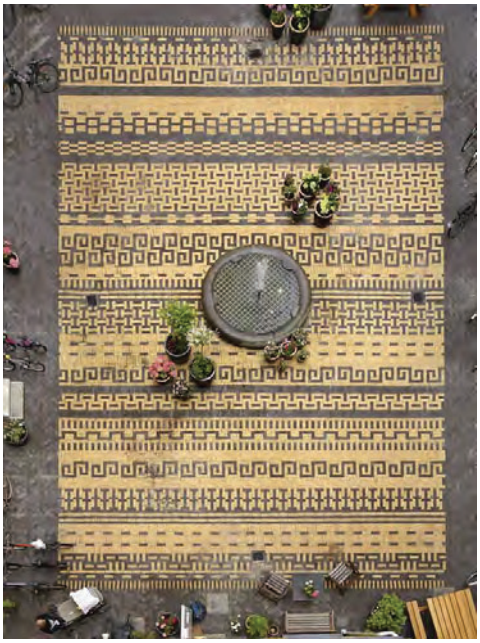
Examples of public art treatments of fencing.

Abraham Lincoln Brigade, San Francisco, Walter Hood, Landscape Architect. Example of public art with historical images communicating past events at the site.

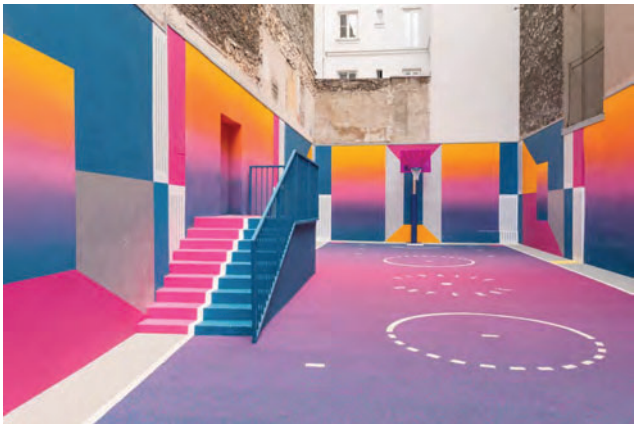
7th Street, Oakland, Walter Hood, Landscape Architect. Example of public art signalling arrival at a site threshold.

Witness Walls, Nashville, Walter Hood, Landscape Architect. Example of public art with historical images communicating past events at the site.

Character Areas (pavement patterning and surface graphics)



Examples of artistic groundscape patterning using off-the-shelf pavers. Courtyard in Classensgade, Copenhagen



Examples of artistic painting of basketball court, in Paris, France.

Examples of creative surface treatments on recreation surfaces.(L) Gordonridge Community Multi-Sport Court by ERA Architects

Examples of artistic painting of 'creative crosswalks' in London, England, by designer Yinka Ilori

APPENDICES

APPENDIX A - APPROVED RE-ZONING PLAN, February 2021

Appendix A: Proposed Amendments to Map 2 – Generalized Future Land Use of the Regional Municipal Planning Strategy

PID 40150567

Cole Harbour

HALIFAX

Area proposed to be redesignated from UR (Urban Reserve) to RC (Rural Commuter)

0 40 80 120 160 200 240 280 m

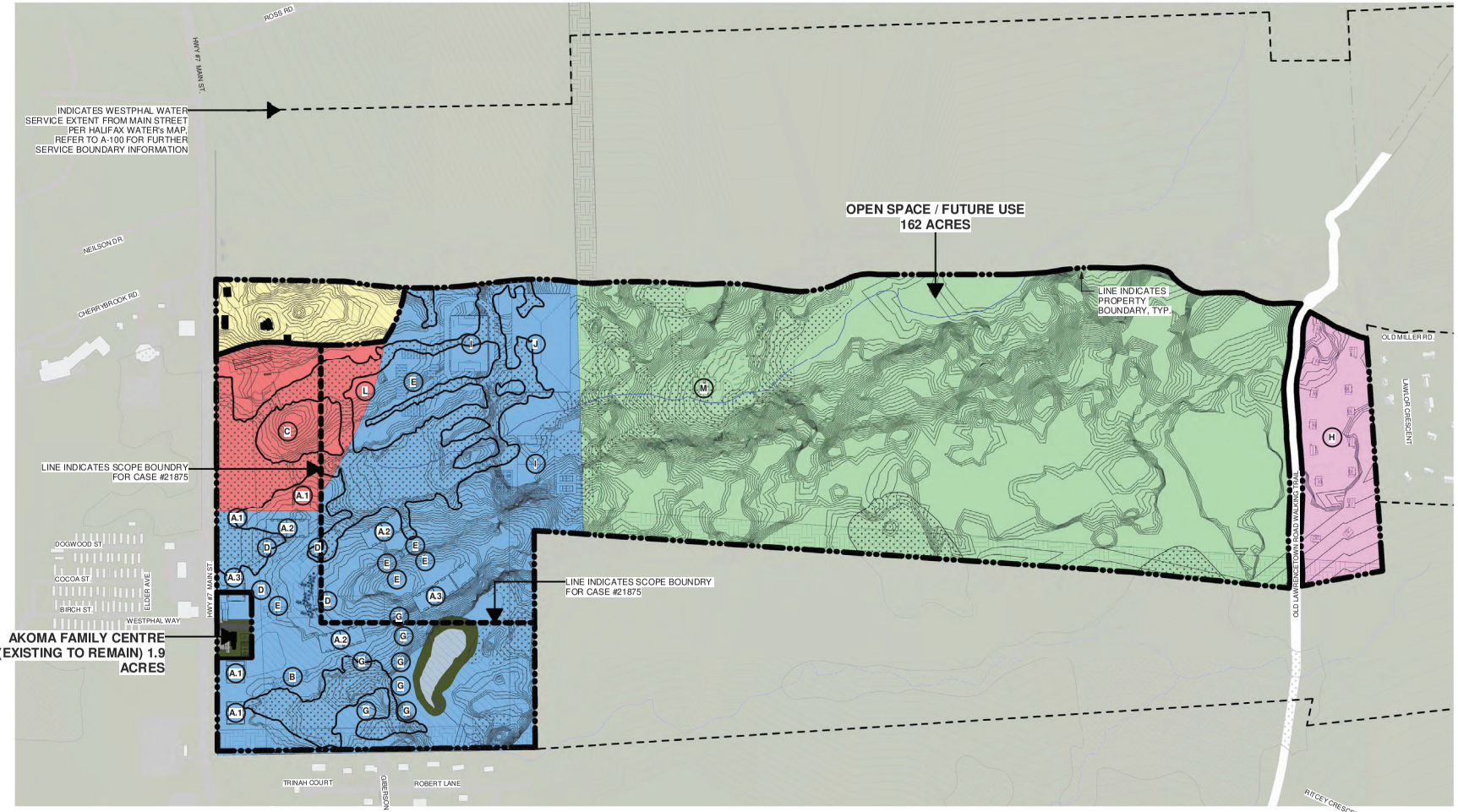
This map is an unofficial reproduction of a portion of the Generalized Future Land Use Map for the plan area indicated.

The accuracy of any representation on this plan is not guaranteed.

Regional Municipal Planning Strategy

9 February 2021 Case 21875 T:\work\planning\SER_Group\SER_Cases\Variances\21875\Maps_Plans\ (JC)

APPENDIX B - PROPOSED MASTER PLAN, February 2022



1 Site Plan - New
1" = 300'-0"

PROGRAM - PROPOSED COMPREHENSIVE DEVELOPMENT LEGEND:

OLD HOME - NEW ZONE

A.1 (2) MIX-USE RESIDENTIAL & COMMERCIAL - 3-4 STOREY
A.2 (1) MULTI-UNIT RESIDENTIAL - 3-4 STOREY
A.3. MULTI-UNIT RESIDENTIAL - 3-4 STOREY

B. NEW AKOMA CHILDREN'S CENTRE - 1 STOREY

C. SENIOR'S HOUSING COMPLEX - 2-3 STOREY

D. 2 UNIT DUPLEX

E. TOWNHOUSE / MULTI-UNIT RESIDENTIAL / COMMERCIAL - 2-4 STOREY

F. LONG TERM CARE FAILITY

G. SINGLE FAMILY RESIDENTIAL - 2 STOREY

H.

I. OUTDOOR RECREATION FACILITY - LARGE SCALE

J. INDOOR SPORTSPLEX - 2 STOREY

K. INDOOR ACQUATIC SPORTSPLEX - 2 STOREY

L. OUTDOOR RECREATION & PLAYGROUND - SMALL SCALE

M. CEMETERY AND CREMETORIUM.

*NOTE: INTENTION THAT OUTDOOR TRAIL NETWORK IS CONNECTED BETWEEN PHASE AREAS.

MASTER PLAN LEGEND:

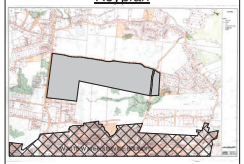
- EXISTING WETLANDS PER HRM SURVEY.
- NOVA SCOTIA POWER 150'-0" WIDE POWER CORRIDOR
- WALKING TRAIL
- VEHICULAR CIRCULATION
- OPEN / LANDSCAPED / NATURAL AREAS
- BROOM LAKE
- BUILDINGS
- CURRENT PROPERTY BOUNDARIES
- CURRENT HALIFAX WATER SERVICE BOUNDARY
- PROPOSED PHASE BOUNDARIES
- WATERCOURSE PER HRM SURVEY DATA
- CONTOURS PER HRM SURVEY DATA
- EXISTING OLD CULTURAL SURVEY DATA ie FOUNDATIONS, ROCK WALL, WELL, ETC. SOUTH TO THE OLD HOME AT WILFRED JACKSON WAY. REFER TO SURVEY DRAWING FOR FURTHER DETAILED INFORMATION.

ZONE LEGEND:

- HERITAGE ZONE
- SENIORS ZONE
- R1 ZONE
- CDD
- OPEN SPACE / FUTURE USE

T.A. SCOTT
ARCHITECTURE + DESIGN
DRAWING INSPIRATION

Keyplan



No.	Description	Date
12.	ISSUED FOR CONSTRUCTION	2022.02.10
11.	ISSUED FOR HRM	2021.03.31
10.	ISSUED FOR HRM	2021.02.08
9.	ISSUED FOR PHASING REVIEW	2021.01.11
8.	ISSUED FOR SITE GEOLOGY	2021.01.07
7.	ISSUED FOR BUILDING D	2020.12.24
6.	RE-ISSUED FOR CDD APPLICATION	2020.09.08
5.	ISSUED FOR CDD APPLICATION	2020.05.26

Issue Schedule

No.	Description	Date

Revision Schedule

Akoma Holdings Inc. - Development

Project Address

Project PID

Site Plan - Akoma Development (N)

Project Number	18-077
Date	2022.02.10
Drawn By	JTP / LAB
Checked By	TAS

A-100.2

Scale: As indicated

APPENDIX C - MOD (MIXED OPPORTUNITY DISTRICT) ZONE PLANNING DOCUMENTS

Area Description			Uses Permitted As of Right	Uses Subject to Site Plan Approval	Uses Subject to Development Agreement
Sub Area	A	8.23 hectares (20.33 acres) of the site containing and immediately surrounding the former NSHCC building	Commercial uses within the former NSHCC building, community uses, and institutional uses except residential care facilities	Mid-rise residential uses, commercial uses within new buildings, and residential care facilities	Multiple unit dwellings including townhouse developments that exceed the built form requirements of the MOD Zone
Sub Area	B	11.67 hectares (28.84 acres) of the site along Highway 7, west of Sub Area A and across from Westphal Way	Low density residential uses and community uses	Mid-rise residential uses, commercial development, institutional uses, and mixed use buildings	Multiple unit dwellings including townhouse developments and mixed use buildings that exceed the built form requirements of the MOD Zone

UR-32A Within the Urban Residential Designation on lands zoned Mixed Opportunity District, Sub Area A shall be established as identified under the Land Use By-law. Sub Area A shall apply to lands containing and immediately surrounding the former NSHCC building. Sub Area A shall enable the adaptive reuse of the former Home building for commercial purposes, institutional and community uses, as well as residential care facilities and multiple unit dwellings. New commercial buildings, residential care facilities and multiple unit dwellings shall be considered through the site plan approval process.

UR-32B Within the Urban Residential Designation on lands zoned Mixed Opportunity District, Sub Area B shall be established as identified under the Land Use By-law. Sub Area B shall apply to lands further from the old Home building and along Highway #7. Sub Area B shall enable a range of residential, commercial, institutional, community and mixed use developments. Uses other than low-rise residential and community uses, such as recreational and open space uses, shall be considered by the site plan approval process. Multiple unit dwellings and mixed use buildings that exceed the built form requirements of the zone shall be considered by development agreement.

UR-32C Within the Urban Residential Designation on lands zoned Mixed Opportunity District, Sub Area C shall be established as identified under the Land Use By-law. Sub Area C shall apply to areas abutting existing residential neighbourhoods. Sub Area C shall enable residential and open space uses. Townhouse dwellings shall be considered through the site plan approval process. Residential care facilities and multiple unit dwellings, except for townhouse dwellings, shall be considered by development agreement.

UR-32I Within the Urban Residential Designation on lands zoned Mixed Opportunity
District, where a building, or access to a building, for a residential care facility or multiple unit dwelling, except for townhouse dwellings, is proposed on lands within both Sub Area B and Sub Area C, it shall be the intention of Council to consider the development pursuant to the
development agreement provisions of the HRM Charter.

UR-32J In considering a development agreement subject to Policy UR-32H or UR-
32I, Council shall consider the vision and the following matters:
(a) the land use impacts of the proposed development on the former Nova Scotia Home for Colored Children building, other uses permitted under the zone and adjacent land uses, in terms of separation distances, building scale, height and design, and buffering;
(b) private and common amenity needs of residents of the development;
(c) provisions for building design, height, bulk, lot coverage, and separation distances from low-rise residential uses;
(d) the location of structures on the lot, off-street parking and loading facilities, driveway accesses, landscaping, planting or retention of trees, outdoor lighting, storage of solid waste, and signs;
(e) walks or other means of pedestrian and bicycle connectivity within the building site and to the surrounding community;
(f) grading, sedimentation and erosion control, and stormwater management;
(g) the general maintenance of the development; and
(h) the provisions of Policy IM-11.

APPENDIX D - RESEARCH FOUNDATIONS

Relevant Desk Research

Adjaye, D., & Allison, P. (2011). African metropolitan architecture. New York: Rizzoli.
African Nova Scotian Economic Prosperity Committee (2021) The Road to Economic Prosperity.
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Asante, M. K. (1980). Afrocentricity: The theory of social change. Buffalo, N.Y: Amulefi Publ. Co.
Carney, J. (2020). In the Shadow of Slavery: Africa's Botanical Legacy in the Atlantic World.
Cooke, S. E. K. O. U. (2021). Hip-Hop Architecture: History / Theory / Practice. S.L.: Ava Academia
Hooks, B. (2009). Belonging: A culture of place.
Hood, W., & Tada, G. M. (2020). Black landscapes matter.
Marcus, A. H., et.al. (December 01, 2016). "Black Placemaking: Celebration, Play, and Poetry". Theory, Culture & Society, 33, 31-56.
McKittrick, K., & Woods, C. A. (2007). Black geographies and the politics of place.
Prieto, Leon C.; Phipps, Simone T. A. (2019)). African American Management History (Emerald Points) . Emerald Publishing Limited.
Roane,J. T. (2018) "Plotting the Black Commons," Souls, 20:3, 239-266
Saunders, Charles R. (1994). Share & Care, The Story of the Nova Scotia Home for Coloured Children.
Shears, R. (2020) "Community, Archaeology & Black Refugees Beechville Nova Scotia as a Case Study." 2020.

Site Visit Focused On ANS Community Spaces

Black Cultural Center
Beechville United Baptist Church
NSHCC
Monroe Historic Site in Beechville
Bauld Centre
Cole Harbour
AKOMA Site: Broom Lake
Coleridge Estates

EBC The Meeting Place Church
St Thomas Church
North Preston Township
North Preston Community Centre

Exhibition: “A Walk Through Africville” East Preston Township
Africville Memorial / Former Site Cherrybrook/Lake Loon Township

Meetings and Interviews

Cheri Bernard - Lake Loon/Cherry Brook, Black Educator,ALI
Delvina Bernard, AKOMA Board Member
Kristina Bookall, Intern Architect, TA Scott Architects
Debbie Carver, ED of AKOMA Family Centre
Deacon Patsy Crawford, Beechville Baptist Church
Shelley Fashan, Inspiring Communities
Angela Gannon, Africville, Curator of ‘A Walk Through Africville’
Russell Grosse, ED of The Black Cultural Centre
David Harrison, Lead Planner
David Hendsbee, AKOMA Board Member - HRM Councillor
Dr. Barb Hamilton-Hinch, Beechville, Educator, ALI
Karen Hudson- Lake Loon/Cherry Brook, Educator, ALI co-chair,
Veronica Marsman, AKOMA Property Manager
Harvey Millar - St. Mary’s University, Business Prof and Jazz Musician, ALI
Zamani Millar, AKOMA Property Committee
Crystal Moulder , Lake Loon/ Cherry Brook, community specialist (ANS),ALI
Abigail Moriah, Planner, Co-Founder of the Black Planning Project
Carolann Wright-Parks, AKOMA Property Committee
Deacon David Provo of the St. Thomas Church Family
Troy Scott, Lead Architect, T.A Scott Architecture and Design Ltd.
Reverend Wallace Smith of the St. Thomas Church Family
Wendi Wilson - N. Preston artist, Educator, writer, designer of the ANS flag,

APPENDIX E - NOVA SCOTIA BUILDING CODE, SCHEDULE “C”: ACCESSIBILITY

Link Here

APPENDIX F - PREMIER TECH AQUA MEMBRANE BIOREACTOR BROCHURE

Ecoprocess™ MBR

Membrane Bioreactor

A Community in the Heart of the Whitlock Golf Course

Client: Whitlock West Homes, QC, Canada

Just minutes from Montreal and renown throughout Quebec as a peaceful, almost idyllic, place to raise a family or retire, Hudson is a tranquil suburb with a rich and rewarding community life. The region is also known for its breathtaking golf course, popular with expert as well as novice golfers for close to a century. Surrounded on all sides by the fairways, the 43 semi-detached and single-family homes of Whitlock West had to meet strict environmental standards and have minimal impact on the local environment.

Context

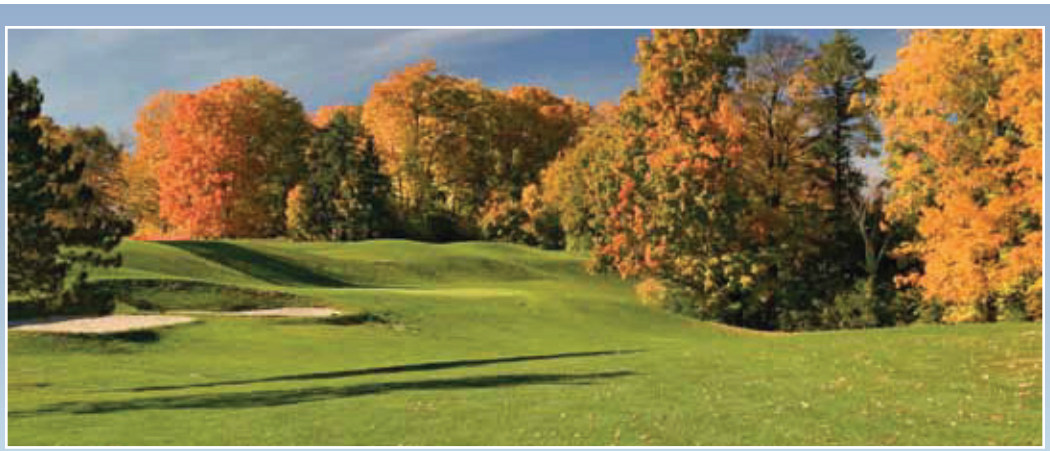
As the wastewater treatment plant of the town of Hudson was not close to Whitlock West and had already reached full capacity, effluent from Whitlock West homes had to be discharged into the storm drainage system. The municipality, however, had upgraded its requirements to ensure complete decontamination (phosphorus removal).

The municipality's construction specifications also included detailed clauses regarding measures to reduce environmental impacts. Whitlock West's main objective was to preserve the natural beauty of this unique site for generations to come. Whereas the town of Hudson currently allows clearing of up to 50% of the trees on a residential lot, only about 20% were cleared, on average, from lots at Whitlock West.

Case study

TECHNOLOGIES PREMIER TECH

PREMIER TECH AQUA



Challenge

A wastewater treatment solution able to meet the following conditions was thus required for Whitlock West:

- Compliance with strict environmental standards for phosphorous removal
- Superior treatment performance at the lowest possible cost
- Maximum preservation of the natural beauty of the site (good integration with the environment)
- Compliance with clearing regulations (small footprint)
- Minimum risk of nuisance (noise and odours)

Effluent quality requirements

P_{tot}	<0,1 mg/L
Fecal coliforms	<200 CFU/100 mL

Solution

Membrane technology is at today's cutting edge in terms of phosphorous removal efficiency. Thanks to its small footprint and outstanding performance, the Ecoprocess™ MBR eliminates the need for a discharge channel, once again considerably reducing costs compared to other technologies.

With its superior performances at lower cost, the Ecoprocess™ MBR membrane technology marketed by Premier Tech Aqua proved to be the only solution that could meet the developer's requirements.

Building plans for this solution were drafted by Marchand Houle and Associates, eliminating the need for costly work by Mont-Tremblant contractor Excavation R.B. Gauthier Inc.

The new Ecoprocess™ MBR system of Whitlock West Homes, which can treat up to 70 m^3/d, was commissioned in September 2011.

"Increasingly, contractors will be expected to comply with stringent environmental standards. With its outstanding treatment performance and relatively low cost, the Ecoprocesss™ MBR made our project possible."

René Schubert
General Manager
Whitlock West, Hudson, QC

PREMIER TECH AQUA

1 800 632-6356
418 862-6642
pta@premiertech.com
PREMIERTECHAQUA.COM

PT ZONE
IT'S ALL YOU NEED!
Register
The toolbox for wastewater professionals
ptzone.premiertechaqua.com

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