

Central Planning Authority

Agenda for a meeting of the Central Planning Authority to be held on December 09, 2020 at **10:00am, in Conference Room 1038, 1st Floor, Government Administration Building, Elgin Avenue.**

21st Meeting of the Year

CPA/21/20

Mr. A. L. Thompson (Chairman)
Mr. Robert Watler Jr. (Deputy Chairman)
Mr. Kris Bergstrom
Mr. Peterkin Berry
Mr. Edgar Ashton Bodden
Mr. Roland Bodden
Mr. Ray Hydes
Mr. Trent McCoy
Mr. Jaron Leslie
Ms. Christina McTaggart-Pineda
Mr. Selvin Richardson
Mr. Fred Whittaker
Mr. Haroon Pandohie (Executive Secretary)
Mr. Ron Sanderson (Deputy Director of Planning (CP))

- 1. Confirmation of Minutes & Declarations of Conflicts/Interests**
- 2. Applications**
- 3. Development Plan Matters**
- 4. Planning Appeal Matters**
- 5. Matters from the Director of Planning**
- 6. CPA Members Information/Discussions**

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APPLICANTS ATTENDING THE AUTHORITY'S MEETING VIA E-CONFERENCE

APPLICANT NAME	TIME	ITEM	PAGE
Clive Smith	11:00	2.1	5
Raglan Ropert	11:30	2.2	7
Botanic Farms Ltd	1:00	2.3	11
Bryant Terry	1:30	2.4	16
Patrick Island Home Assoc.	2:00	2.5	23
Davenport Development Ltd	2:30	2.6	26

1.1 Confirmation of Minutes of CPA/20/20 held on November 25, 2020.

1.2 Declarations of Conflicts/Interests

ITEM	MEMBER

2.0 APPLICATIONS
APPEARANCES (Items 2.1 to 2.6)

2.1 CLIVE SMITH (Caribbean Home Planners) Block 43E Parcel 318 (F20-0177) (P20-0336) (\$350,000) (MW)

Application for duplex; 2,658.5 sq. ft. with lot size variance.

Appearance at 11:00

FACTS

<i>Location</i>	Promenade Rd., Bodden Town
<i>Zoning</i>	Low Density Residential
<i>Notification result</i>	No objections
<i>Parcel size proposed</i>	0.2357 ac. (10,267.092 sq. ft.)
<i>Parcel size required</i>	12,500 sq. ft.
<i>Current use</i>	Vacant
<i>Proposed building size</i>	2,658.5 sq. ft.
<i>Total building site coverage</i>	25.9%
<i>Required parking</i>	2
<i>Proposed parking</i>	4

BACKGROUND

September 30, 2020 (CPA/16/20; Item 2.17) – the application was considered and it was resolved to adjourn the application.

Recommendation: Discuss the application **for the following reasons:**

- 1) Lot Size (10,267.092 sq. ft. vs 12,500 sq. ft.)

APPLICANT’S COMMENTS

On behalf of my client Mr. Clive Smith I am requesting a lot size variance to create a Duplex on the above plot of land.

The Variance requesting is 2233sq.ft less than the 12500sq.ft lot size required for a Duplex.

Please note that the proposed will not be materially detrimental to the person residing or working in the vicinity to the adjacent property owners to neighbors or to the public welfare in with regulation 8(13)b of the development and planning regulation (2020). A letter of variance must be submitted to the Department regarding the lot size, explaining that there is sufficient reasons to grant a lot size which may include the fact that,

- 1) *The characteristics of the proposed development are consistent with the character of the surrounding area.*
- 2) *Unusual terrain characteristics limit the site development potential or the proposal will be material detrimental to the reason.*

I am asking the Central Planning Authority to favorable grant planning permission to the proposed duplex on this property.

Should you need any further information please do not hesitate to contact me at the given contact info above.

I am looking forward to a response at your earliest convenience

PLANNING DEPARTMENT ANALYSIS

General

The application is for a Duplex; 2,658.5 sq. ft. with a lot size variance to be located on Promenade Rd., Bodden Town.

Zoning

The property is zoned Low Density Residential and the Department would offer the following comments regarding the specific issue noted below.

Specific Issues

1) Lot Size

Regulation 9(8)(e) states *“the minimum lot size for each duplex shall be 12,500 sq. ft.”*. The proposed lot is currently 10,267.092 sq. ft. a difference of 2,232.908 sq. ft. respectively.

The adjoining parcels were notified and no objections were received.

The Authority should assess if there is sufficient reason and an exceptional circumstance that exists in accordance with Section 8(13) to warrant granting a lot size variance.

Supplemental Information

The Authority should be reminded the above mentioned application was seen on September 30th 2020 (CPA/16/20; Item 2.17) and it was considered and it was resolved to adjourn the application and invite the applicant to appear before the Authority to discuss concerns regarding the lot size.

2.2 RAGLAN ROPER (Island Drafting (Mr A Berry)) Block 4D Parcel 40 (P20-0488) (\$420,000) (JP)

Application for addition to duplex to create 3 apartments

Appearance at 11:30

FACTS

<i>Location</i>	Mount Close, West Bay
<i>Zoning</i>	MDR
<i>Notification result</i>	No Objector
<i>Parcel size proposed</i>	0.2 ac. (8712 sq. ft.)
<i>Parcel size required</i>	20,000 sq. ft.
<i>Current use</i>	Residential
<i>Proposed building size</i>	7,012 sq. ft.
<i>Total building site coverage</i>	40.97%
<i>Allowable units</i>	4
<i>Proposed units</i>	3
<i>Allowable bedrooms</i>	6
<i>Proposed bedrooms</i>	16
<i>Required parking</i>	5
<i>Proposed parking</i>	6

BACKGROUND

October 17, 2018 (CPA/23/18; item 2.3) – the application for an addition to a duplex to create 13 bedrooms was refused for the following reasons:

1. The proposed addition will result in a total of 13 bedrooms and the Authority is of the view that this will intensify the use of the site in a manner that is not in keeping with the character of the area and this will detract from the ability of the surrounding land owners to enjoy the amenity of the area.
2. The plans as submitted do not show a demarcated parking area and the Authority is of the view that there is insufficient area on site to support the number of potential vehicles associated with occupants of 13 bedrooms.

Recommendation: Discuss the application, **for the following reasons:**

- 1) Suitability
- 2) Lot size variance (8712 sqft v 20,000 sqft)
- 3) Bedroom density (6 vs 16)
- 4) Parking

AGENCY COMMENTS

Comments from the Water Authority, National Roads Authority, Department of Environmental Health, Fire Department and Department of Environment (NCC) are noted below.

Water Authority

ATU for Existing & Proposed:

The developer is advised that the estimated wastewater flows from the proposed development, when added to those of the existing development on this parcel, exceed the maximum allowed for treatment by septic tank(s). Therefore, approval for the proposed development requires that all wastewater generated on the parcel; i.e., from both proposed and existing structures, shall be treated in an onsite aerobic wastewater treatment system(s). The Water Authority’s requirements for the proposed development are as follows:

Wastewater Treatment and Disposal

The developer, or their agent, is required to submit an Onsite Wastewater Treatment Proposal, per the attached Form, which meets the following requirements. Water Authority review and approval of the proposed system is a condition for obtaining a Building Permit.

- ***The proposed development requires Aerobic Treatment Unit(s) with NSF/ANSI Standard 40 (or equivalent) certification that, when operated and maintained per manufacturer’s guidelines, the system achieves effluent quality of 30 mg/L Biochemical Oxygen Demand and 30 mg/L Total Suspended Solids. The proposed system shall have a treatment capacity of at least 2,250 US gallons per day (gpd), based on the following calculations:***

BUILDING	UNITS/BLDG	GPD/UNIT	GPD/BLDG	GPD
Apartment Building	13 x 1-Bed Units	150/1-Bed Unit	1,950	1,950
-	1 x 3-Bed Unit	300/3-Bed Unit	300	300
TOTAL				2,250

- ***Treated effluent from the ATU shall discharge to an effluent disposal well constructed by a licenced driller in strict accordance with the Authority’s standards. Licenced drillers are required to obtain the site-specific minimum borehole and grouted casing depths from the Authority prior to pricing or constructing an effluent disposal well.***

- ***To achieve gravity flow, treated effluent from the ATU must enter the disposal well at a minimum invert level of 4'5" above MSL. The minimum invert level is that required to maintain an air gap between the invert level and the water level in the well, which fluctuates with tides and perching of non-saline effluent over saline groundwater.***

Existing septic tank shall be decommissioned

The Existing septic tank shall be decommissioned as per the Water Authority's Best management: practices:

http://www.waterauthority.ky/upimages/download/BMPs_abandoned_WW_systems1_1423220782.pdf

Lint Interceptor Required at commercial, institutional, coin-op laundries.

An approved lint interceptor is required for commercial, institutional and coin-operated laundries. The developer is required to submit specifications for all laundry (washer) equipment to the Water Authority for determination of the required capacity of interceptor. Specifications can be sent via email to development.control@waterauthority.ky

Water Supply

Please be advised that the proposed development site is located within the Cayman Water Company's (CWC) piped water supply area.

- *The developer is required to notify the Cayman Water Company without delay, to be advised of the site-specific requirements for connection.*
- *The developer shall provide water supply infrastructure per CWC's specification and under CWC's supervision.*

National Roads Authority

No comments received.

Department of Environmental Health

1. *DEH has no objections to the proposed. However, the proposed garbage bins will not suffice as this development will require (1) 8 cubic yard container with once per week servicing.*
2. *The applicant must submit revisions showing the location of the garbage enclosure that meets DEH requirements.*

Fire Department

Please depict proposed/existing fire hydrant/firewell.

Department of Environment (NCC)

Under delegated authority from the National Conservation Council (section 3 (13) of the National Conservation Law, 2013), the Department of Environment confirms that we have no comments.

APPLICANT'S LETTER

See Appendix A

PLANNING DEPARTMENT ANALYSIS

General

The application site is located West Bay within an established residential area. Neighbouring properties bound the site to the east, west and south with Mount Close, which serves the site, running to the north. The property is currently a single storey duplex.

The application seeks planning permission for an addition to the upper floor accommodation to provide 5 further bedrooms increasing the total number from 11 to 16 bedrooms in the complex.

Zoning

The property is zoned Medium Density Residential.

Specific Issues

1) Suitability

Regulation 9(7) permits apartments in suitable locations.

The application seeks permission for 3 apartments. Members are invited to note bedroom 3 on the upper floor which appears to provide self-contained accommodation within an apartment and the store room which benefits from an external door and provision of a bathroom.

Members are invited to consider whether the application site is suitably located for apartments.

2) Lot size variance (8712 sqft v 20,000 sqft)

Regulation 9(7)(f) requires a minimum lot size of 20,000 sq ft. The application seeks planning permission for apartments on a lot sized 8712 sq ft.

Members are invited to reflect upon the variance letter in order to determine whether adequate justification has been provided.

3) Bedroom density (6 vs 16)

Regulation 9(7)(c) permits a total of 6 bedrooms based on the lot size.

The application seeks planning permission for a total of 16 bedrooms.

Members are invited to reflect upon the resultant number of bedrooms (16) and consider whether an intensified use of the site is appropriate.

4) Parking

The proposed resultant apartment scheme creates an anticipated demand of 5 parking spaces. The scheme proposes 6. Therefore, the initial calculations for parking are met.

However, the resultant increase in bedrooms to 16 intensifies the use of the site and no restrictions are available to control future occupants of the site. Consequently, the level of parking proposed to support apartments in possible multi-occupation is potentially insufficient.

Members are also invited to note owing to the constrained nature of the site the proposed parking spaces would result in manoeuvring on the local road instead of ensuring ingress and egress in forward gear onto the road. Therefore, users of the proposed development are anticipated to create potential issues to the free flow of traffic along the adjacent road.

Members are invited to consider whether adequate parking is available for 16-bedrooms across the entire site and if the parking is suitable to protect the free-flow of traffic along the adjacent road.

2.3 BOTANIC FARMS LTD (Kariba Architecture) Block/Parcel 59A 313 and 312 59B 71 and 72 (P20-0723) (\$4.15M) (JP)

Application for farm consisting of farm shop, storage, packaging, greenhouse buildings and water tanks.

Appearance at 1:00

FACTS

<i>Location</i>	Botanic Road, Midland East
<i>Zoning</i>	LDR
<i>Notification result</i>	Objectors
<i>Parcel size proposed</i>	4.5 ac. (196,785 sq. ft.)
<i>Parcel size required</i>	n/a
<i>Current use</i>	Vacant
<i>Proposed building size</i>	19,320 sq. ft.
<i>Total building site coverage</i>	9.82%
<i>Required parking</i>	25
<i>Proposed parking</i>	34

Recommendation: Discuss the application, **for the following reason:**

- 1) Suitability

AGENCY COMMENTS

Comments from the Water Authority, National Roads Authority, Department of Environmental Health, Fire Department and Department of Environment (NCC) are noted below.

Water Authority

Please be advised that the information submitted within the proposal is inadequate for the Water Authority to determine its requirements. The Water Authority is charged under the Water Authority Law (2018 Revision) to protect groundwater and requires the proponent to submit additional information listed below to determine its requirements. The Authority may require modifications of plans and/or impose specific conditions to protect surface and groundwater from contamination.

Additional Information Required:

1. *The proponent shall submit the following details on the hydroponic system:
 - a) **A detailed schematic drawing of the proposed hydroponic system to be installed.**
 - b) **A report detailing the systems process including water usage and discharge data.**
 - c) **Chemicals and their reportable quantities used within the hydroponic process.***
2. *The proponent shall provide details on the sargassum composting operation referenced on the site plan. Specifically addressing the sargassums composting process, quantities to be used and how raw sargassum and processed compost shall be stored on-site.*
3. *The proponent shall submit details on the use of fertilizers, herbicides and pesticides on the Farm both in the hydroponic buildings and in the plant nurseries and orchards.*
4. *The proponent shall submit a Wastewater Management Plan detailing how the farm proposes to mitigate against groundwater contamination from discharge of high nutrient loads, sargassum leachates and chemicals into the water table.*

Upon receipt and review of the required submittals listed above, the Water Authority will send a follow-up memorandum setting out the Authorities requirements for the proposed.

National Roads Authority

No comments received.

Department of Environmental Health

The Department has no objections to the proposed in principle with the understanding that the following will be submitted for review and approval”

1. *The Department has no objections to the proposed in principle with the understanding that the following will be submitted for review and approval:
 - a. *Provide details for the packaging process.*
 - b. *Provide details for the type/source of water that will be used to wash product.*
 - c. *Submit the specifications for the generator.**

Fire Department

Stamped approved plans.

Department of Environment (NCC)

Under delegated authority from the National Conservation Council (section 3 (13) of the National Conservation Law, 2013), the Department of Environment (DoE) offers the following comments for your consideration.

After receiving this planning application, the DoE met with the Applicant on 22 September 2020. The DoE wished to discuss:

- *the proposed sargassum composting facility;*
- *the location of the hydroponic farm; and*
- *management considerations with respect to the location adjacent to the Queen Elizabeth II Botanic Park.*

The Applicant submitted revised plans on 30 September 2020 and therefore this review is based on the revised plans.

The Applicant has removed the sargassum processing facility shown on the original plans because “it has become apparent that the requirements from the DOE in relation to this will become cost prohibitive and such the developer has opted to remove this for the time being.” The statement that the DoE has put requirements on the Applicant is simply not true. When we met with the Applicant, we discussed the following:

- *The Applicant was proposing to wash the sargassum prior to composting, and had not developed any plans for the run-off. We recommended that the Applicant manage the salty water and not let it run off into the groundwater. From a practical perspective, washing salty water into the groundwater beneath the Applicant’s orchard would affect the Applicant’s yield and the survival of their own plants, as well as the plants in the surrounding area. It does not seem to us to be a sensible endeavor to contaminate the water beneath one’s own farm. We also referred them to the Water Authority as the statutory body responsible for groundwater.*
- *The Department of Agriculture (DoA) has been doing testing on the nutrient content of sargassum, and we recommended that the Applicant contact the DoA. We made reference to studies which show heavy metal accumulation in sargassum and recommended they conduct more research. We also discussed successful projects in other countries which the Applicant could consider (e.g. compost tea).*
- *We also noted to the Applicant that the sargassum processing facility was directly adjacent to the north-east of a residential receptor, and that it should be positioned away from them (and particularly avoiding being directly upwind) due to the odour of decomposing sargassum.*

The DoE is supportive of sustainable agriculture in appropriate locations. During our meeting, we expressed our concerns with respect to the location of the hydroponic farm. It is located directly adjacent to the Queen Elizabeth II Botanic Park and is located within primary habitat. For those reasons, we suggested shifting the development two lots west (including Block 59B Parcel 69 and 57). These sites are owned by the Applicant,

and this would both avoid the high value primary habitat and increase the distance from the Queen Elizabeth II Botanic Park.

The primary habitat at the site is dry forest and shrubland, and supports Cayman parrot nesting. The primary habitat in the area to the west has been invaded by logwood and is therefore of a lower ecological value (see Figure 1). We suggested that, at a minimum, a 20 foot natural vegetation buffer should be left between the farm and the Botanic Park. The revised plans do show a 20 foot buffer along the northern and eastern boundaries of the site.



Figure 1. The application site (pink), the area of high value primary habitat (blue) and the area of primary habitat which has been invaded by logwood (orange). We recommend that the farm is shifted two lots to the west, which is also land under the same ownership.

The Queen Elizabeth II Botanic Park is also a reserve for Cayman Parrots. There can be a conflict between parrots and farmers which is increased when monospecific crops are planted. We recommended operational measures to the Applicant including planting a mosaic of fruit trees, keeping a variety of heights and trimming trees (especially mangoes) relatively short.

Although a 20 foot buffer has been included, we would still prefer to see the development shifted west. We recommend that the Applicant discuss the application with the National Trust and the Tourism Attraction Board as the land owners for the Queen Elizabeth II Botanic Park.

APPLICANT'S LETTER

See appendix B

OBJECTIONS

See appendix C

PLANNING DEPARTMENT ANALYSIS

General

The application seeks Planning Permission for use of land for agricultural purposes together with construction of farm buildings for the purposes of storage, package, retail and greenhouse.

The application site, consisting of three parcels, is located in Midland East area of the District off Frank Sound Road. Access to the site is obtained from Botanic Road which runs to the north. The National trust own land to the east, the location of Queen Elizabeth II Botanic Park. Land to the north is vacant and the Water Authority have an installation to the north-east. Land to the west is vacant, beyond which a small cluster of dwellings exist. Vacant land forms the southern boundary and falls within Agricultural zone.

Zoning

The property is zoned Low Density Residential.

Specific Issue

1) Suitability

The application site is located within the Low Density Residential zone consequently Regulation 9(1) is applicable which states:

In a Residential zone, the primary uses are residential and horticultural. Applicants for permission to effect any development in a Residential zone shall ensure that the massing, scale, proportion and design of such development is consistent with the historic architectural traditions of the Islands.

Permission is sought for agricultural use together with packaging, processing, storage and commercial (retail shop). Therefore, the scheme does not comply with the first part of the provisions set out in Regulation 9(1) with regard to residential or horticultural use. Members are invited to consider the content of the support document together with submitted plans in assessing whether the proposal is appropriate in regard to massing and scale as per the assessment outlined in the second part of Regulation 9(1).

To aid members in their determination adjacent land to the south is zoned for agricultural use.

2.4 BRYANT TERRY (GMJ Home Plans Ltd.) Block 28B Parcel 23 (F19-0123) (P20-0743) (\$540,000) (MW)

Application for (6) unit apartment complex, 4' boundary wall with 4'-8" columns & lot size variance.

Appearance at 1:30

FACTS

<i>Location</i>	Shamrock Rd., Bodden Town
<i>Zoning</i>	Low Density Residential
<i>Notification result</i>	No Objectors
<i>Parcel size proposed</i>	0.5 ac. (21,780 sq. ft.)
<i>Parcel size required</i>	25,000 sq. ft. + 10,000 sq. ft. (x2) = (45,000 sq. ft.)
<i>Current use</i>	Two Existing Residences
<i>Proposed building size</i>	3,609 sq. ft.
<i>Total building site coverage</i>	26.6%
<i>Allowable units</i>	7.5
<i>Proposed units</i>	6
<i>Allowable bedrooms</i>	12
<i>Proposed bedrooms</i>	6
<i>Required parking</i>	6
<i>Proposed parking</i>	6

BACKGROUND

April 24, 2019 (CPA/08/19; Item 2.12) –the application was considered and it was resolved to grant approval.

October 28, 2020 (CPA/18/20; Item 2.7) – the application was considered and it was resolved to adjourn the application.

Recommendation: Discuss the application **for the following reasons:**

- 1) Suitability
- 2) Lot Size (21,780 sq. ft. vs 45,000 sq. ft.)
- 3) Fence height (4'-0"wall/ 4'-8"columns vs 4'-0")

AGENCY COMMENTS

Comments from the Water Authority, National Roads Authority, Department of

Environmental Health, Department of Environment (NCC) and Fire Department are noted below.

Water Authority

Please be advised that the Water Authority’s requirements for this development are as follows:

Wastewater Treatment & Disposal

- *The developer shall provide a **septic tank(s)** with a capacity of at least **(2,250) US gallons** for both the proposed and existing, based on the following calculations:*

BUILDING	UNITS/BLDG	GPD/UNIT	GPD/BLDG	GPD
<i>Proposed Apartments</i>	<i>6 x 1-Bed Units</i>	<i>150/1-Bed Unit</i>	<i>900</i>	<i>900</i>
<i>Existing House 2</i>	<i>1 x 2 Bed House</i>	<i>225/2-Bed Unit</i>	<i>225</i>	<i>225</i>
<i>Existing House 3</i>	<i>1 x 2 Bed House</i>	<i>225/2-Bed Unit</i>	<i>225</i>	<i>225</i>
TOTAL				1,350GPD

- *The septic tank shall be constructed in strict accordance with the Authority’s standards. Each compartment shall have a manhole to allow for inspection and service. Manholes shall extend to or above grade and be fitted with covers that provide a water-tight seal and that can be opened and closed by one person with standard tools. Where septic tanks are located in traffic areas, specifications for a traffic-rated tank and covers are required.*
- ***Treated effluent from the septic tank shall discharge to an effluent disposal well constructed by a licenced driller in strict accordance with the Authority’s standards.** Licenced drillers are required to obtain the site-specific minimum borehole and grouted casing depths from the Authority prior to pricing or constructing an effluent disposal well.*
- ***To achieve gravity flow, treated effluent from the septic tank shall enter the disposal well at a minimum invert level of 5’1” above MSL.** The minimum invert level is that required to maintain an air gap between the invert level and the water level in the well, which fluctuates with tides and perching of non-saline effluent over saline groundwater.*

For Water Authority approval at BCU stage, a detailed profile drawing of the proposed wastewater treatment system is required. The drawing shall indicate:

- 1. If the proposed septic tank will be site-built or precast. (You may use the Water Authority drawing for site-built tanks available from the Authorities website or a Precast septic tank drawing if you intend to use a Precast Tank).*
- 2. All dimensions and materials shall be provided for any site-built tanks.*
- 3. Manholes extensions are permitted up to a maximum of 24” below finished grade.*
- 4. Detailed specifications including make and model for (H-20) traffic-rated covers for septic tanks proposed to be located within traffic areas.*
- 5. A detailed profile cross-section of the wastewater system clearly showing the plumbing from building stub out to the effluent disposal well achieving the minimum invert connection specified above. (Alternatively details of proposed lift station shall*

- be required)
6. The Water Authorities updated 2020 effluent disposal well specifications.
 7. A 30ft horizontal separation between the effluent disposal well and any stormwater drainage wells.

Stormwater Management

This development is located over the Lower Valley fresh water lens or within the 500m buffer zone of the lens. In order to protect the fresh water lens, the Water Authority requests that stormwater drainage wells are drilled to a maximum depth of 60ft instead of the standard depth of 100ft as required by the NRA.

Water Supply

The proposed development site is located within the Water Authority's piped water supply area.

- *The developer shall contact Water Authority's Engineering Services Department at 949-2837, without delay, to be advised of the site-specific requirements for connection to the public water supply.*
- *The developer shall submit plans for the water supply infrastructure for the development to the Water Authority for review and approval.*
- *The developer shall install the water supply infrastructure within the site, under the Water Authority's supervision, and in strict compliance with the approved plans and Water Authority Guidelines for Constructing Potable Water Mains. The Guidelines and Standard Detail Drawings for meter installations are available via the following link to the Water Authority's web page: <http://www.waterauthority.ky/water-infrastructure>.*

The Authority shall not be held responsible for delays and/or additional costs incurred by the developer due to the developer's failure to provide sufficient notice to the Authority.

If there are questions or concerns regarding the above, please email them to: development.control@waterauthority.ky

National Roads Authority

As per your memo dated September 15th, 2020 the NRA has reviewed the above-mentioned planning proposal. Please find below our comments and recommendations based on the site plan provided.

Boundary Plan 9

Thank you for setting back the boundary line to respect Boundary Plan 9

Road Capacity Issues

The traffic demand to be generated by a residential development of a six (6) multi-family units has been assessed in accordance with ITE Code 220. Thus, the assumed average trip rates per dwelling unit provided by ITE for estimating the daily, AM and PM peak hour trips are 6.63, 0.51 and 0.62 respectively. The anticipated traffic to be added onto

Shamrock Road is as follows:

Expected Daily Trip	AM Peak Hour Total Traffic	AM Peak 16% In	AM Peak 84% Out	PM Peak Hour Total Traffic	PM Peak 67% In	PM Peak 33% Out
40	3	1	2	4	3	1

Based on these estimates, the impact of the proposed development onto Shamrock Road is considered to be minimal.

Access and Traffic Management Issues

Two-way driveway aisles shall be a minimum of twenty-two (22) ft. wide.

Entrance and exit curves shall have no less than fifteen (15) feet radius curves, and have a width of twenty-four (24) ft.

A six (6) foot sidewalk shall be constructed on Shamrock Road, within the property boundary, to NRA standards.

Tire stops (if used) shall be placed in parking spaces such that the length of the parking space is not reduced below the sixteen (16) feet minimum.

Stormwater Management Issues

The applicant is encouraged to implement state-of-the-art techniques that manage stormwater runoff **within the subject parcel** and retain existing drainage characteristics of the site as much as is feasible through innovative design and use of alternative construction techniques. However, it is critical that the development be designed so that post-development stormwater runoff is **no worse than** pre-development runoff. To that effect, the following requirements should be observed:

- The applicant shall demonstrate, prior to the issuance of any Building Permits, that the Stormwater Management system is designed to embrace storm water runoff produced from a rainfall intensity of 2 inches per hour for one hour of duration and ensure that surrounding properties and/or nearby roads are not subject to stormwater runoff from the subject site.
- The stormwater management plan shall include spot levels (existing and finished levels) with details of the overall runoff scheme. Please have applicant provide this information prior to the issuance of a building permit.
- Construct a gentle ‘hump’ at the entrance/exit (along the entire width of each driveway) in order to prevent stormwater runoff from and onto Shamrock Road. Suggested dimensions of the ‘hump’ would be a width of 6 feet and a height of 2-4 inches. Trench drains often are not desirable.
- Curbing is required for the parking areas to control stormwater runoff.

- *Roof water runoff should not drain freely over the parking area or onto surrounding property. Note that unconnected downspouts are not acceptable. We recommend piped connection to catch basins or alternative stormwater detention devices. If catch basins are to be networked, please have applicant to provide locations of such wells along with details of depth and diameter prior to the issuance of any Building Permits.*

At the inspection stage for obtaining a Certificate of Occupancy, the applicant shall demonstrate that the installed system will perform to the standard given. The National Roads Authority wishes to bring to the attention of the Planning Department that non-compliance with the above-noted stormwater requirements would cause a road encroachment under Section 16 (g) of The Roads Law (2005 Revision). For the purpose of this Law, Section 16(g) defines encroachment on a road as

"any artificial canal, conduit, pipe or raised structure from which any water or other liquid escapes on to any road which would not but for the existence of such canal, conduit, pipe or raised structure have done so, whether or not such canal, conduit, pipe or raised structure adjoins the said road;"

Failure in meeting these requirements will require immediate remedial measures from the applicant.

Department of Environmental Health

1. *Department has no objections to the proposed in principle.*
2. *This development requires (8) 32 gallon bins. The enclosure must be located as close to the curb as possible without impeding the flow of traffic. (22-9-20)*

Department of Environment (NCC)

N/A

Fire Department

Please depict existing or proposed Fire hydrant/Fire well.

APPLICANT'S LETTER

Letter 1

We write on behalf of our client, Bryant Terry, with regards to the following variance;

- *A lot size variance – The proposed lot is 21,780 sq. ft. (0.5 Ac.) which is less than the required for a proposed apartment development, where 2 houses exist, in areas zoned Low Density Residential.*

We request permission for the proposed development per the drawings provided and humbly give the following reasons:

1. *Per section 8(13)(d) of the Planning Regulations, the owners of the adjacent properties were notified by register mail;*
2. *Per section 8(13)(b)(iii) of the Planning Regulations, the proposal will not be materially detrimental to persons residing or working in the vicinity, to the adjacent property, to the neighbourhood, or to the public welfare;*
3. *The application complies with all other relevant planning requirements.*

We look forward to your favourable response to this variance request. Should you have any queries, please do not hesitate to contact us.

Letter 2

I write further to a letter to the Central Planning Authority, dated 15 September 2020, from GMJ Homeplans Ltd. in relation to a lot size variance for the above referenced parcel.

By way of background, planning permission for a 1,993 square foot house was granted on 5 May 2019, with permit number B19-0424 (“House 1”). House 1 has not been constructed and was intended to be a rental property, along with the 2 other approved homes currently on Parcel 23.

I have taken the decision, subject to your approval, to forgo the plans for House 1 in favour of the proposed apartments on the grounds that the new proposed plan will better utilize the vacant land and yield a higher return on investment. This change is an economic business decision based on the high cost and scarcity of good quality, assessable land on Grand Cayman that is suitable for property rentals.

Given the preceding, I would be grateful for your favourable consideration of the lot size variance being sought. Should you have any questions please contact me.

PLANNING DEPARTMENT ANALYSIS

General

The application is for a (6) Unit Apartment complex with 4’ boundary wall with lot size variance to be located on Shamrock Rd., Bodden Town.

Zoning

The property is zoned Low Density Residential and the Department would offer the following comments regarding the specific issue noted below.

Specific Issues

1) Suitability

Section (8) states the following development is permitted in a Low Density Residential Zone.

- (a) Detached & semi-detached houses.
- (b) Duplexes
- (c) In locations considered as suitable by the Authority guest houses and apartments.

An overview of the proposed site shows the surrounding area to be primarily residential homes and vacant parcels with apartments within the nearby vicinity.

- 28B 241:- Hylton’s Apartments
- 28B 240:- Nightengale Manor
- 28E 19:- Savannah Apartments
- 28E 106:- Bennett’s Villas
- 25C 80:- Coral Bay Village

2) Lot Size

Regulation 9(8)(f) of the Development & Planning Regulations (2020) states the minimum lot size for Apartments is 25,000 sq. ft. The proposed parcel would only be 21,780 sq. ft. (0.5 Ac.) as there are (2) existing approved residences built on site a total lot size of 45,000 sq. ft. there for a variance would be required for a difference of 23,220 sq. ft.

3) Fence Height

The CPA fence guideline (Section 4.3.1) states *“in residential and tourism-related zones, no part of a solid wall or fence should exceed 48 inches in height”*. The proposed concrete fence would be 4’-0” with 4’-8” columns a difference of 0’-0” & 8” respectively.

The parcels within 250’ radius were notified and one objection was received.

The Authority should assess under Section 8(13) if there are exceptional circumstances and sufficient reasons to grant the lot size variance.

Supplemental Information

The Board should be reminded that an application for Three (3) houses was seen on April 24, 2019 and subsequently approved (CPA/08/19; Item 2.12), however only 2 of the 3 homes were built. The larger of the 3 homes was decided by the applicant to not be built in turn of using the remaining space for the proposed apartment application. In addition the above mentioned application was seen on October 28, 2020 (CPA/18/20; Item 2.7) and it was resolved to adjourn the application and invite the applicant to appear before the Authority to discuss concerns with the application regarding site suitability and lot size.

2.5 PATRICK ISLAND HOME ASSOC. (GMJ Home Plans Ltd.) Block 24E Parcel 473 and Block 25B Parcel 29 Rem.1 (P20-0322) (P20-0323) (\$45,000) (BES)

Application for two sets of subdivision gates.

Appearance 2:00

FACTS

<i>Location</i>	Patrick's Island
<i>Zoning</i>	LDR
<i>Notification result</i>	Objectors
<i>Height</i>	7'-6"

BACKGROUND

September 16, 2020 (**CPA/15/20; Item 2.17**) – CPA adjourned the application and invite the applicant to appear before the Authority to discuss details of the application.

March 22, 2006 (**CPA/09/06; Item 2.3**) - CPA resolved to refuse the application, for the following reasons:

1. The proposed gates will result in a gated community which will negatively affect the cultural, social and general welfare of the Island's people, which is contrary to section 1.2 of The Development Plan 1997. More specifically, the gated community will:
 - a) Introduce elements of cultural and social isolation and segregation.
 - b) Restrict and/or hamper the ability of the public to access the existing parcels of Land for Public Purposes located within the subdivision.
 - c) Restrict and/or hamper the ability of emergency and service vehicles to access the subdivision.
 - d) Restrict and/or hamper the ability to use the subdivision roads as an alternative access route to or from George Town in the event of an emergency event (e.g. traffic collisions, tropical storms).
2. Gated communities reduce the ability of the public to share roads which can result in the duplication of road networks and inefficient use of land which is contrary to section 3.14 of The Development Plan 1997.
3. The reduction of road sharing and interconnectivity is not a prudent transportation planning initiative as encouraged by section 1.3(f) of The Development Plan 1997.
4. The Authority was not convinced that the proposed gates would provide for the level of safety contended by the persons in appearance at the meeting. Further, any minimal safety benefit that might accrue from the proposed gates would not outweigh the negative social and cultural issues identified in item 1) above.

Recommendation: Discuss the application, **for the following reasons:**

- 1) The previous decision to refuse a similar application.
- 2) Objectors concern

AGENCY COMMENTS

Comments from the National Roads Authority and Chief Fire Officer are noted below.

National Roads Authority

As per your memo dated May 8th, 2020 the NRA has reviewed the above-mentioned planning proposal. Please find below our comments and recommendations based on the site plan provided.

The NRA has no objections or concerns regarding the above proposed electric gates, however, the applicant should keep in mind that by gating the community the NRA will no longer provide any maintenance service in terms of,

- 1. Bush cutting*
- 2. Pothole patching and/or*
- 3. Basic road repair*

The NRA will also no longer be responsible for the eleven existing streetlights along Windswept Drive and Revere Road, which will be handed over to the Patrick's Island Home Owners Association to handle the monthly payment as well as basic maintenance with CUC.

In terms of the gate design, proposed Gate 3 – Amity Street, the gate should swing the other way into the private section of road and not onto public road.

Chief Fire Officer

Propose gate should have S.O.S . See attached for reference.

Technical Specifications

Basic Concept

The Siren-Operated Sensor (SOS) is designed to respond swiftly to the "YELP" mode of all standard sirens. A reminder decal is provided to be placed on each entry gate. Responders already own their siren. This device represents Public Safety without spending Public Funds.

The SOS is the nation's most widely used Uniform Emergency Gate Access.

Installation and Testing

Since all gate operators use 9 to 30 Volts AC or DC for their electronic controls, this source can easily be used to power the mini requirements of the SOS. A demonstration "YELP audio CD is provided, along with instructions, with each SOS sold.

Technical Specifications

The Frequency response of the Siren-Operated Sensor is from 900Hz to 6Khz. The SOS relies on a time-varying frequency input in this range. This, plus proprietary techniques, allows the microprocessor to respond to the siren's "YELP" with a dry relay closure in 2.5 seconds.

•The SOS uses an unidirectional microphone. Alignment is not necessary.

•Range of the SOS is adjustable - 5 to 50 feet or more. A potentiometer located on the PC Board provides this adjustability. The SOS is not affected by ambient light.

- The PC board is mounted in a 3.5" x 4.7" x 2.4" weather-tight enclosure.
- The unit weight is approximately 8 oz.
- The power requirements are 9-30 Volts AC or DC with approximately .1 mA Draw.
- Programmable to be momentary relay activation , 15 minute hold, or Latch.

Warranty

The SOS has a five year warranty when installed according to the manufacturer's Specifications.

OBJECTIONS

See Appendices D, E, and F

PLANNING DEPARTMENT ANALYSIS

General

The application is for 2 metal gates system, 5'-6" rising to 7'-0" high and one 4' wide walk gate to be located on Poindexter Road & Amity Street.

The gates are made of aluminium swinging gates, motor and remote-controlled with concrete columns of over 7.3ft in height.

Zoning

The property is zoned Low Density Residential.

Specific Issue

1) Previous decision

The Authority should take into consideration the previous decision to refuse gates in this subdivision.

SUPPLEMENTARY ANALYSIS

With regards to legal access over Patrick Island's subdivision roads, the objectors (24E325 and 326) have a 30-ft vehicular right-of-way over Block 24E Parcel 473 and Block 25B Parcel 29 Rem1.

2.6 DAVENPORT DEVELOPMENT LTD Block 22E Parcel 460 (P20-0745) (\$4.6Million) (JP)

Modification of planning permission to enable inclusion of additional habitable accommodation and revisions to cabanas

Appearance 2:30

FACTS

<i>Location</i>	Bimini Drive, Grand Harbour
<i>Zoning</i>	NC
<i>Notification result</i>	No objectors
<i>Parcel size proposed</i>	7.28 ac. (317,116.8 sq. ft.)
<i>Parcel size required</i>	20,000 sq. ft.
<i>Current use</i>	Vacant
<i>Proposed building size</i>	60,692 sq. ft.
<i>Total building site coverage</i>	22.42%
<i>Allowable bedrooms</i>	174
<i>Proposed bedrooms</i>	244

BACKGROUND

November 25th, 2020 (**CPA/20/20; item 2.6**) – It was resolved to adjourn the application and invite the applicant to appear before the authority to discuss concerns regarding the inclusion of bedrooms as dens.

April 14th, 2020 (**admin approval**) Interior layout changes at gym and store – approved (P20-0283)

June 6th, 2019 (**admin approval**) Revise dock site plan, remove viewing decks – approved (P19-0549)

April 17th, 2019 (**CPA/07/19; item 2.34**) Revise subdivision design (volumetric) – approved (P19-0414)

May 29th, 2019 (**CPA/10/19; item 2.15**) - Revise subdivision design – approved (P19-0201)

September 19, 2018 (**CPA/21/18; item 2.20**) – Application for 96 apartments, 100 strata lot subdivision, tennis court with clubhouse, 2 cabanas, swimming pool, canal docks, sea wall, sign, wall and 8x 1000gallon underground tanks – approved (P18-0510)

May 30, 2018 (**CPA/13/18; Item 2.2**) – Permission for a 20’ canal excavation which extends into the current application site – approved (P18-0209)

Recommendation: Discuss the application, **for the following reasons:**

- 1) Bedroom density (174 vs 244)

AGENCY COMMENTS

Water Authority

The developer's agents have submitted a proposal, summarized below, for onsite wastewater treatment and disposal at the above referenced development.

Wastewater Treatment System:

BUILDING(S) SERVED	REQUIRED CAPACITY (GPD)	PROPOSED SYSTEM (MAKE & MODEL)	PROPOSED CAPACITY (GPD)
<i>Buildings 1-10</i>	<i>21,000</i>	<i>KEE 40 HR-2</i>	<i>29,312 GPD</i>
<i>Buildings 11, 12</i>	<i>3,900</i>	<i>Settlement Tank of Approx. 60M</i>	
<i>Club House/Gym</i>	<i>500</i>	<i>2- Lift Stations</i>	
TOTAL:	25,400 GPD	TOTAL:	29,312 GPD

Effluent Disposal:

- The effluent disposal well shall be constructed by a licenced driller in strict accordance with the Authority's standards. Minimum required depth of borehole and grouted casing are site-specific and are obtained by licenced drillers before pricing or constructing an effluent disposal well.*
- To achieve gravity flow, treated effluent from the treatment system must enter the disposal well at a minimum invert level of 4'5" above MSL. The minimum invert level is that required to maintain an air gap between the invert level and the water level in the well, which fluctuates with tides and perching of non-saline effluent over saline groundwater.*

The above proposal meets the Water Authority's specifications.

REQUIRED NOTIFICATIONS:

The Developer/ Supplier shall notify the Water Authority at least two business days prior to:

- 1. Completion of effluent disposal well construction.*
- 2. Excavation to accommodate the treatment system.*
- 3. Placement of pre-built tank(s) / construction of site-built tank(s).*
- 4. Covering the piping to and from the system.*
- 5. All Non-Corrosion/Decay resistant forms used for the pour-in-place slab, shall be removed completely after tank construction.*
- 6. Placing the tank cover slab (this applies to systems installed in site-built or precast concrete tanks).*
- 7. All site-built tanks are required to pass a 24-hour water leak test inspected by the Water Authority.*

8. *Walls of tanks are to be rendered with ½” thick steel finish sand cement render with all corners rounded.*
9. *Following the water leak test, the tanks are to be sealed using 2 coats of Corotech Coal Tar epoxy Black VI57 or equivalent with 12 hour drying time between coats.*

Request for final inspection for certificate of occupancy shall be submitted via the Planning Department’s Online Planning System (OPS). Ensure that the wastewater system has been filled with water (do not use saline groundwater which will cause operational problems) and that adequate power is available to facilitate Water Authority testing of complete system operations and alarms.

Note that by review and acceptance of plans, specifications and installation of the wastewater treatment system, the Authority assumes no responsibility for the system’s successful operation. The system design is certified to achieve effluent standards of 30mg/L BOD5 and 30 mg/L TSS, if installed, operated and maintained per manufacturer’s guidelines. It is the owner’s responsibility to contract for routine O&M service to ensure that effluent standards of 30 mg/L BOD and 30 mg/L TSS are consistently met.

If there are questions or concerns regarding the above, please email them to: development.control@waterauthority.ky . Thank you.

APPLICANT’S LETTER

We would like to apply to Modify Planning Permission to an approved Multi-Family Residential Development (P18-0510), to add Dens with additional floor area in some Balconies and Terraces; Change Interior layout of all the units in Buildings 1 through 12; Add Equipment Room and Bathrooms to Cabana 1; and add a window in the Equipment Room of Cabana 2. All changes done are within the approved Building Footprint.

PLANNING DEPARTMENT ANALYSIS

General

The application site is located in the Grand Harbour area of Prospect. The commercial shopping area of Grand Harbour is located to the west and recreational provision, a skate park, forms the north-west boundary. Bimini Drive runs along the southern and eastern perimeters.

The application seeks planning permission for the enclosure of approved balconies/terraces to create additional bedrooms and dens. Revisions are proposed to cabanas 1 and 2.

Zoning

The property is zoned Neighbourhood Commercial.

Specific Issues

1) **Bedroom density (174 v 244)**

In determining the previously approved scheme CPA was invited to consider the surrounding and adjacent zone of low density residential and the requirements set out in regulation 9(8)(c) in light of the adjacent and surrounding land uses and zones.

Members are reminded this Regulation sets a maximum of twenty-four bedrooms per acre which equates to 174 bedrooms across the site.

Medium density residential zone sets a maximum of 219 across the site.

High density residential zone sets a maximum of 306 across the site.

The original application which established the principle of residential development in a neighbourhood commercial zone permitted **224** bedrooms. 50 bedrooms in excess of the Regulations maximum for low density residential.

Proposed alterations which affect the exterior of the building enclose the previously approved balconies/terraces in order to create additional bedrooms and dens.

The application incorrectly identifies only 6 bedrooms being created.

In reality, 37 dens are accessed through existing rooms and are considered to represent true dens, however, a total of 20 additional dens and bedrooms are separately accessed and independent. Bringing the total number of bedrooms across the site to **244**.

Members are reminded the surrounding area is zoned low density residential.

Members are invited to consider whether adequate justification has been provided to further exceed the regulation requirements for low density, and indeed, medium density requirements.

2.0 APPLICATIONS
REGULAR AGENDA (Items 2.7 to 2.24)

2.7 SEAN BENT & JANYCEE PARCHMENT (TAG Ltd) Block 14D Parcel 406 (P20-0896) (\$55,000) (JP)

Application for Change of use from unauthorised church assembly to commercial (nail salon)

FACTS

<i>Location</i>	Smith Road, George Town
<i>Zoning</i>	NC
<i>Notification result</i>	No objectors
<i>Parcel size proposed</i>	0.01 ac. (567 sq. ft.)
<i>Parcel size required</i>	20,000 sq. ft.
<i>Current use</i>	Church Assembly (unauthorised)
<i>Proposed building size</i>	567 sq. ft.
<i>Total building site coverage</i>	n/a
<i>Required parking</i>	2
<i>Proposed parking</i>	2

BACKGROUND

Existing premises used as church assembly without the benefit of Planning Permission, however, due to the passage of time the current use is immune from enforcement action

Recommendation: Approve

AGENCY COMMENTS

Comments from the Water Authority, Department of Environmental Health and Fire Department are noted below.

Water Authority

Wastewater Treatment:

- *The Pasadora Centre is served by four Clearstream onsite aerobic wastewater treatment systems with a combined treatment capacity of 4,000gpd. The system's design capacity is adequate to accommodate the proposed change-of-use. However, following a review of the Water Authorities online maintenance tracking system. It appears the system has not been adequately maintained and in need of repair. As the system has been poorly maintained it requires the following to comply with Water*

Authority regulations:

- *The system shall be repaired and brought back into operation by a Registered Service Provider per the link of companies employing certified OWTS technicians.*

http://www.waterauthority.ky/upimages/pagebox/2018_ListofCompaniesEmployingCertifiedOWTSOMTechs_1533930948.pdf

- *A copy of a monthly maintenance contract with a Registered Service Provider shall be provided to the Water Authority.*
- *Registered Service Providers submit monthly Service Reports to the client and to the Water Authority via our online tracking system. The required repair should be scheduled without delay. Receipt of a copy of a monthly maintenance contract, an updated service report and subsequent inspection and sampling of the system by the Water Authority to ensure compliance with regulatory limits are conditions for approval of Certificate of Occupancy for the proposed change-of-use.*

If there are questions or concerns regarding the above, please email them to: development.control@waterauthority.ky

Department of Environmental Health

This application is not recommended for approval.

1. The applicant must submit the following:

- a. Details of the sanitization process of all equipment.*
- b. Specifications for the hot water heater must be submitted.*
- c. The approved BCU drawings for the mechanical ventilation system must be submitted for review and approval.*

Fire Department

Stamped approved plans.

PLANNING DEPARTMENT ANALYSIS

General

Application site is located within an established two-storey commercial plaza on Smith Road zoned as Neighbourhood Commercial. The premises are currently being used for church assembly purposes without the benefit of planning permission, believed to have occurred in excess of 5 years and therefore immune from enforcement action.

The application seeks Planning Permission to change the use of the premises back to commercial.

Zoning

The property is zoned Neighbourhood Commercial.

2.8 WINSTON CALLOO Block 43A Parcel 408 (P20-0936) (\$400,000) (AS)

Application for a duplex & wall.

FACTS

<i>Location</i>	Rutgers Dr
<i>Zoning</i>	MDR
<i>Parcel Size</i>	.2350 AC (10,236 sq. ft.)
<i>Parcel Size Required</i>	7,500 sq ft
<i>Current Use</i>	Vacant
<i>Proposed Use</i>	Residential
<i>Required Parking</i>	2 spaces
<i>Proposed Parking</i>	4 spaces
<i>Proposed Wall Height:</i>	4 ft.

Recommendation: Approve.

AGENCY COMMENTS

Comments from the National Roads Authority are noted below.

National Roads Authority:

NRA has not provided comments.

PLANNING DEPARTMENT ANALYSIS

General

The application is for a 2,490 sq ft duplex and a 4 ft high roadside wall.

Zoning

The property is zoned Medium Density Residential.

Specific Issue

Pursuant to Section 13(3)(e) of the Development and Planning Law (2017 Revision) the erection of walls and fences with setback adjacent to the road requires Planning permission.

2.9 FORGET ME NOT LTD. (Abernethy & Associates Ltd) Block 72B Parcel 29 (P20-0840) (\$26,202.00) (BES)

Application for 33-lots subdivision, one-LPP lot and one-road parcel.

FACTS

<i>Location</i>	John McLean Drive, East End
<i>Zoning</i>	MDR
<i>Notification result</i>	No Objectors
<i>Parcel Size Proposed</i>	8.7122 ac. (379,503 sq. ft.)
<i>Parcel Size Required</i>	7,500 sq. ft.
<i>Current Use</i>	Vacant
<i>Proposed Use</i>	Same as above

BACKGROUND

No previous planning history of the property.

Recommendation: Discuss the application, **for the following reason:**

- 1) Lot width (15.1-ft (lot 15) and 30-ft (lot 22) respectively vs. 60-ft)

AGENCY COMMENTS

Comments from the Water Authority, National Roads Authority, Fire Services, and Department of Environment (NCC) are noted below.

Water Authority

Please be advised that the Water Authority's requirements for this development are as follows:

Water Supply:

The proposed development site is located within the Water Authority's piped water supply area.

- *The developer shall contact Water Authority's Engineering Services Department at 949-2837, without delay, to be advised of the site-specific requirements for connection to the piped water supply.*
- *The developer shall submit plans for the water supply infrastructure for the development to the Water Authority for review and approval.*
- *The developer shall install the water supply infrastructure within the site, under the Water Authority's supervision, and in strict compliance with the approved plans and Water Authority Guidelines for Constructing Potable Water Mains. The Guidelines and Standard Detail Drawings for meter installations are available via the following link to the Water Authority's web page: <http://www.waterauthority.ky/water-infrastructure>.*

The Authority shall not be held responsible for delays and/or additional costs incurred by the developer due to the developer's failure to provide sufficient notice to the Authority.

Wastewater Treatment:

- *The developer is advised that wastewater treatment and disposal requirements for built development are subject to review and approval by the Water Authority.*

National Roads Authority

No comments from NRA - the Department has reminded NRA for their comments.

Fire Services

Proposed subdivision--a minimum required 20' fire access will be required. fire wells and fire hydrants will be required for the proposed development as per code.

Department of Environment (NCC)

Under delegated authority from the National Conservation Council (section 3 (13) of the National Conservation Law, 2013), the Department of Environment (DoE) offers the following comments for your consideration.

The application site consists of primary habitat, specifically dry shrubland. Primary habitat is mature habitat in its natural state, otherwise uninfluenced by human activity where ecological processes are not significantly disturbed. These habitats are often very old, existing long before humans and may consist of many endemic and ecologically important species.

The Department does not support speculative or wholesale clearing of large subdivision sites. Primary habitat is in severe decline and becoming a scarce and highly threatened resource as a result of land conversion for human uses. Should the Central Planning Authority grant planning permission for this subdivision, we recommend that land clearing be restricted to required roadways and installation of services until the development of individual lots is imminent to allow for individual lot owners have the opportunity to retain as much native vegetation as possible. Native vegetation is best suited for the habitat conditions of the site, resulting in vegetation that is low maintenance and therefore a very cost-effective choice. The residential subdivision on Arlington Dr. (see Figure 1) is a good example of building in a forest whilst retaining vegetation. As this is primary habitat, any future proposal to clear or develop the resulting parcels should be the subject of a separate consultation with the National Conservation Council.



Figure 1: 2018 LIS aerial imagery showing houses built in the Arlington subdivision (highlighted in red) within retained habitat.

PLANNING DEPARTMENT ANALYSIS

General

The application is for 33-lots subdivision, one-LPP lot and one-road lot at the above-captioned property. The site is located on John McLean Drive, East End.

The resultant acreage of the lots after the subdivision would range from 7,550-sq ft to 12,130-sq ft, and the minimum required lot size is 7,500-sq ft per Regulation 9(7)(e) of the Development and Planning Regulations (2020 Revision).

Under Regulation 28 of the Development and Planning Regulations (2020 Revision), According to the size of a subdivision, *the Authority may require the applicant to set aside land not exceeding five percent of the gross area of the land being developed, for public purposes, including active and passive recreation and public rights of way.* In this instance, the minimum LPP lot size would be 18,975.15-sq ft, and the proposed LPP lot size is 18,980-sq ft.

Zoning

The property is zoned Medium Density Residential.

Specific Issue

1) Lot Width

The proposed lot widths would be 15.1-ft (lot 15) and 30-ft (lot 22) respectively located at the end of the hammer-head cul-de-sac. In the past, subdivisions with similar lot widths at hammer-head cul-de-sac were granted planning permission.

2.10 SAMANTHA JANE GRUNDY Block 22D Parcel 131 (P20-0701) (\$300,000) (AS)

Application for apartments & dock

FACTS

<i>Location</i>	Woodstock Rd., Red Bay
<i>Zoning</i>	LDR
<i>Notice Result</i>	No objections
<i>Parcel Size Proposed</i>	0.58 acres (25,264 sq. ft.)
<i>Parcel Size Required</i>	25,000 sq ft
<i>Current Use</i>	Vacant
<i>Proposed Use</i>	Residential
<i>Building size</i>	2,773 sq ft
<i>Building Coverage</i>	6.8%
<i>Allowable Units</i>	8 units (15 units per acre)
<i>Proposed Units</i>	3
<i>Proposed Parking</i>	6
<i>Required Parking</i>	5 (1.5 spaces per unit)

Recommendation: Discuss the application **for the following reasons:**

1. Suitability
2. Revised site plan

AGENCY COMMENTS

Comments from the National Conservation Council, Water Authority, Fire Service and Department of Environmental Health are noted below.

National Conservation Council

“The application site is man-modified and of limited ecological value. However, best management practices should be adhered to during construction to prevent any impacts

to the canal; these include but are not limited to:

- Any stockpiled materials should be kept away from the canal edge to reduce the possibility of rainwater runoff washing material into the canal;
- The dock construction area shall be fully enclosed with silt screens with a 4-ft minimum skirt depth to contain any sedimentation or debris arising from construction of the dock as depicted by the submitted site plan;
- The silt screens shall remain in place until the water contained inside the screens has cleared to the same appearance as the water immediately outside of the screens.

It is also recommended to incorporate native vegetation into the landscaping scheme as native vegetation is not only more ecologically valuable but also more sustainable as it is best suited to the climate and habitat conditions, resulting in vegetation that requires less maintenance, which makes it a cost-effective choice.”

Water Authority

“Please be advised that the Water Authority’s requirements for this development are as follows:

Wastewater Treatment & Disposal

- *The developer shall provide a septic tank(s) with a capacity of at least (1,250) US gallons for the proposed, based on the following calculations:*

<i>BUILDING</i>	<i>UNITS/BLDG</i>	<i>GPD/UNIT</i>	<i>GPD/BLDG</i>	<i>GPD</i>
<i>Main Residence</i>	<i>1 x 3-Bedroom unit</i>	<i>300gpd/3-Bedroom unit</i>	<i>300gpd</i>	<i>300gpd</i>
<i>Guest House 1</i>	<i>1 x 1-Bedroom unit</i>	<i>150gpd/1-Bedroom unit</i>	<i>150gpd</i>	<i>150gpd</i>
<i>Guest House 2</i>	<i>1 x 1-Bedroom unit</i>	<i>150gpd/1-Bedroom unit</i>	<i>150gpd</i>	<i>150gpd</i>
<i>TOTAL</i>	<i>600gpd</i>			

- *The septic tank shall be constructed in strict accordance with the Authority’s standards. Each compartment shall have a manhole to allow for inspection and service. Manholes shall extend to or above grade and be fitted with covers that provide a water-tight seal and that can be opened and closed by one person with standard tools. Where septic tanks are located in traffic areas, specifications for a traffic-rated tank and covers are required.*
- *Treated effluent from the septic tank shall discharge to an effluent disposal well constructed by a licenced driller in strict accordance with the Authority’s standards. Licenced drillers are required to obtain the site-specific minimum borehole and grouted casing depths from the Authority prior to pricing or constructing an effluent disposal well.*

- *To achieve gravity flow, treated effluent from the septic tank shall enter the disposal well at a minimum invert level of 4'5" above MSL or 5'8" if installed less than 100ft from the canal. The minimum invert level is that required to maintain an air gap between the invert level and the water level in the well, which fluctuates with tides and perching of non-saline effluent over saline groundwater.*

For Water Authority approval at BCU stage, a detailed profile drawing of the proposed wastewater treatment system is required. The drawing shall indicate:

- 1. If the proposed septic tank will be site-built or precast. (You may use the Water Authority drawing for site-built tanks available from the Authorities website or a Precast septic tank drawing if you intend to use a Precast Tank).*
- 2. All dimensions and materials shall be provided for any site-built tanks.*
- 3. Manhole extensions are permitted up to a maximum of 24" below finished grade.*
- 4. Detailed specifications including make and model for (H-20) traffic-rated covers for septic tanks proposed to be located within traffic areas.*
- 5. A detailed profile cross-section of the wastewater system clearly showing the plumbing from building stub out to the effluent disposal well achieving the minimum invert connection specified above. (Alternatively details of proposed lift station shall be required)*
- 6. The Water Authorities updated 2020 effluent disposal well specifications.*
- 7. A 30ft horizontal separation between the effluent disposal well and any stormwater drainage wells.*

Water Supply

The proposed development site is located within the Water Authority's piped water supply area.

- *The developer shall contact Water Authority's Engineering Services Department at 949-2837, without delay, to be advised of the site-specific requirements for connection to the public water supply.*
- *The developer shall submit plans for the water supply infrastructure for the development to the Water Authority for review and approval.*
- *The developer shall install the water supply infrastructure within the site, under the Water Authority's supervision, and in strict compliance with the approved plans and Water Authority Guidelines for Constructing Potable Water Mains. The Guidelines and Standard Detail Drawings for meter installations are available via the following link to the Water Authority's web page: <http://www.waterauthority.ky/water-infrastructure>.*
- *The Authority shall not be held responsible for delays and/or additional costs incurred by the developer due to the developer's failure to provide sufficient notice to the Authority.*

Fire Service

The Fire Service has marked the fire vehicle access drawing approved.

Department of Environmental Health

“The department has no objection to the proposed in principle.

a. This development requires (4) 33 gallon bins.”

PLANNING DEPARTMENT ANALYSIS

General

The application is for a 2,773 sq ft apartments & dock.

Owners of parcels within a 150 ft radius have been notified of the application, and no objections have been received.

Zoning

The property is zoned Low Density Residential.

Specific Issues

1. Suitability

Pursuant to Regulation 9(8), *detached and semi-detached houses, duplexes and, in suitable locations, guest houses and apartments are permissible.*

The surrounding land uses in the immediate area is dwelling houses and vacant properties. From a planning perspective, a duplex would be more suitable for the area based on the surrounding land uses as noted on the Cayman Land Info Map.

2. Revised Site Plan

A revised site plan should be submitted depicting the following:

- i. The garbage enclosure must be setback a minimum of 6-ft from the property lines in accordance with Regulation 8(7) of the Development and Planning Regulations (2020);
- ii. The enter/exit points are to be a minimum of 22-ft wide;
- iii. The applicant shall construct a six-foot wide concrete sidewalk along the front property line, and a 4 feet minimum in width landscape strip along the inside edge of the sidewalk;
- iv. The parking lot and driveway aisles surfaced with asphaltic concrete or equivalent and tire stops provided for each parking space which must be striped.
- v. Each parking space shall be striped and directional traffic arrows painted upon the pavement near the edge of the roadway indicating enter/exit.

2.11 CHATTERBOX (CCS Ltd) Block 14E Parcel 9 (P20-0895) (\$481,000) (JP)

Application for part change of use from dive shop to mixed use dive shop, commercial (medical) and institutional.

FACTS

<i>Location</i>	South Church Street, George Town
<i>Zoning</i>	BR/R
<i>Notification result</i>	No Objectors
<i>Parcel size proposed</i>	1 ac. (43560 sq. ft.)
<i>Parcel size required</i>	10,000 sq. ft.
<i>Current use</i>	Dive centre
<i>Proposed building size</i>	2786 sq. ft.
<i>Total building site coverage</i>	6.4%
<i>Required parking</i>	22
<i>Proposed parking</i>	22

BACKGROUND

No relevant history

Recommendation: Discuss the application, **for the following reason:**

- 1) Suitability

AGENCY COMMENTS

Comments from the Water Authority, National Roads Authority, Department of Environmental Health, Department of Environment (NCC) and Fire Department are noted below.

Water Authority

Please be advised that the Water Authority’s requirements for this development are as follows:

Wastewater Treatment & Disposal

- *The developer shall provide a **septic tank(s)** with a capacity of at least **(2,250) US gallons** for the proposed, based on the following calculations:*

BUILDING	UNITS/BLDG	GPD/UNIT	GPD/BLDG	GPD
<i>Pre-School</i>	<i>1,722sqft</i>	<i>0.75gpd/sqft</i>	<i>1,291gpd</i>	<i>1,291gpd</i>

Speech Therapy Center	1064sqft	0.15gpd/sqft	159.6gpd	159.6gpd
Dive Shop	225sqft	0.15gpd/sqft	33.75gpd	33.75gpd
TOTAL				1,484.85gpd

- *The septic tank shall be constructed in strict accordance with the Authority’s standards. Each compartment shall have a manhole to allow for inspection and service. Manholes shall extend to or above grade and be fitted with covers that provide a water-tight seal and that can be opened and closed by one person with standard tools. Where septic tanks are located in traffic areas, specifications for a traffic-rated tank and covers are required.*
- *Treated effluent from the septic tank shall discharge to an effluent disposal well constructed by a licenced driller in strict accordance with the Authority’s standards. Licenced drillers are required to obtain the site-specific minimum borehole and grouted casing depths from the Authority prior to pricing or constructing an effluent disposal well.*
- *To achieve gravity flow, treated effluent from the septic tank shall enter the disposal well at a minimum invert level of 4’11” above MSL or 5’11” if installed less than 100ft from the sea. The minimum invert level is that required to maintain an air gap between the invert level and the water level in the well, which fluctuates with tides and perching of non-saline effluent over saline groundwater.*

Change-of-use with Existing Septic Tank

If the developer proposes to utilize the existing septic tank and/or disposal well, the system shall be inspected and serviced per the Septic Tank Inspection Form that can be downloaded from the Water Authority’s website via the following link: <https://bit.ly/2RO8MBB>. The completed inspection form shall be returned to the Water Authority for review and determination as to whether the existing system meets Water Authority design specifications. Any deficiencies noted will require repair or replacement prior to final approval for certificate of occupancy.

For Water Authority approval at BCU stage, a detailed profile drawing of the proposed wastewater treatment system is required. The drawing shall indicate:

- 1. If the proposed septic tank will be site-built or precast. (You may use the Water Authority drawing for site-built tanks available from the Authorities website or a Precast septic tank drawing if you intend to use a Precast Tank).*
- 2. All dimensions and materials shall be provided for any site-built tanks.*
- 3. Manholes extensions are permitted up to a maximum of 24” below finished grade.*
- 4. Detailed specifications including make and model for (H-20) traffic-rated covers for septic tanks proposed to be located within traffic areas.*
- 5. A detailed profile cross-section of the wastewater system clearly showing the*

plumbing from building stub out to the effluent disposal well achieving the minimum invert connection specified above. (Alternatively details of proposed lift station shall be required)

6. *The Water Authorities updated 2020 effluent disposal well specifications.*
7. *A 30ft horizontal separation between the effluent disposal well and any stormwater drainage wells.*

Water Supply

The proposed development site is located within the Water Authority's piped water supply area.

- *The developer shall contact Water Authority's Engineering Services Department at 949-2837, without delay, to be advised of the site-specific requirements for connection to the public water supply.*
- *The developer shall submit plans for the water supply infrastructure for the development to the Water Authority for review and approval.*
- *The developer shall install the water supply infrastructure within the site, under the Water Authority's supervision, and in strict compliance with the approved plans and Water Authority Guidelines for Constructing Potable Water Mains. The Guidelines and Standard Detail Drawings for meter installations are available via the following link to the Water Authority's web page:
<http://www.waterauthority.ky/water-infrastructure> .*

The Authority shall not be held responsible for delays and/or additional costs incurred by the developer due to the developer's failure to provide sufficient notice to the Authority.

*If there are questions or concerns regarding the above, please email them to:
development.control@waterauthority.ky*

National Roads Authority

No comments received.

Department of Environmental Health

1. The department has no objections to the proposed change of use from commercial to commercial medical and institutional.

Department of Environment (NCC)

Under delegated authority from the National Conservation Council (section 3 (13) of the National Conservation Law, 2013), the Department of Environment confirms that we have no comments.

Fire Department

Stamped approved drawings uploaded.

APPLICANT'S LETTER

See Appendix G

PLANNING DEPARTMENT ANALYSIS

General

The application site is located in George Town and currently operates as a dive centre. The Caribbean Sea forms the western boundary with South Church Street running along the east. Residential properties share the north and south boundaries.

The application seeks Planning Permission for a part change of use from dive shop to commercial (medical) and institutional use in the main building and retaining the smaller building for dive operation purposes.

Zoning

The property is zoned Beach Resort/Residential.

Specific Issues

1) Suitability

- (i) Non-residential use in Beach Resort/Residential zone

Regulation 15(1) identifies the Beach Resort/Residential zone as a transitional zone between Hotel/Tourism and Low Density Residential zones and provides for *'Development within this zone will generally be permitted if it has the appearance of residential development in scale and massing'*.

The application seeks planning permission for the change of use of an existing building with no external alterations being proposed. The scale and massing will remain unchanged.

Members are invited to consider appearance implications with regards to number of vehicles in light of three potential uses and the operating hours. However, based on square footage proposed parking provision satisfies Regulation requirements.

- (ii) Institutional use in non-institutional zone

Regulation 14(2) permits institutional facilities in any zone where the provision meets the needs of the community.

The application is supported by a document (Appendix B) which sets out the business model, explains the business currently exists on a different site which is not fit for purpose and reflects upon existing provision on island or lack thereof.

Members are invited to review the support document and whether a community need is demonstrated.

2.12 IAN KIRKHAM (Johnson Design + Architecture) Block 49B Parcel 9 (P20-0713) (\$750,000) (JP)

Application for three two-storey houses with swimming pools.

FACTS

<i>Location</i>	Rum Point Drive, North Side
<i>Zoning</i>	NC
<i>Notification result</i>	No objectors
<i>Parcel size proposed</i>	0.6 ac. (26,136 sq. ft.)
<i>Parcel size required</i>	22,500 sq. ft.
<i>Current use</i>	Vacant
<i>Proposed building size</i>	7702 sq. ft.
<i>Total building site coverage</i>	16%
<i>Allowable units</i>	Discretion of CPA
<i>Proposed units</i>	3
<i>Required parking</i>	3
<i>Proposed parking</i>	3

BACKGROUND

No history

Recommendation: Discuss the application, **for the following reasons:**

- 1) Suitability
- 2) High water setback
- 3) Front setback variance 12' v 20'
- 4) 6' boundary wall and parking

AGENCY COMMENTS

Comments from the Water Authority, National Roads Authority, Department of Environmental Health, Department of Environment (NCC) and Fire Department are noted below.

Water Authority

Please be advised that the Water Authority's requirements for this development are as follows:

Wastewater Treatment & Disposal

- *The developer shall provide a **septic tank(s)** with a capacity of at least **(2,000) US***

gallons for the proposed, based on the following calculations:

BUILDING	UNITS/BLDG	GPD/UNIT	GPD/BLDG	GPD
House 1	1 x 4-Bed Unit	375gpd/4-Bed Unit	375gpd	375gpd
House 2	1 x 4-Bed Unit	375gpd/4-Bed Unit	375gpd	375gpd
House 3	1 x 4-Bed Unit	375gpd/4-Bed Unit	375gpd	375gpd
TOTAL				1,125GPD

- *The septic tank shall be constructed in strict accordance with the Authority’s standards. Each compartment shall have a manhole to allow for inspection and service. Manholes shall extend to or above grade and be fitted with covers that provide a water-tight seal and that can be opened and closed by one person with standard tools. Where septic tanks are located in traffic areas, specifications for a traffic-rated tank and covers are required.*
- ***Treated effluent from the septic tank shall discharge to an effluent disposal well constructed by a licenced driller in strict accordance with the Authority’s standards.** Licenced drillers are required to obtain the site-specific minimum borehole and grouted casing depths from the Authority prior to pricing or constructing an effluent disposal well.*
- ***To achieve gravity flow, treated effluent from the septic tank shall enter the disposal well at a minimum invert level of 5’7” above MSL or 5’10” if installed less than 100ft from the sea.** The minimum invert level is that required to maintain an air gap between the invert level and the water level in the well, which fluctuates with tides and perching of non-saline effluent over saline groundwater.*

For Water Authority approval at BCU stage, a detailed profile drawing of the proposed wastewater treatment system is required. The drawing shall indicate:

1. *If the proposed septic tank will be site-built or precast. (You may use the Water Authority drawing for site-built tanks available from the Authorities website or a Precast septic tank drawing if you intend to use a Precast Tank).*
2. *All dimensions and materials shall be provided for any site-built tanks.*
3. *Manholes extensions are permitted up to a maximum of 24” below finished grade.*
4. *Detailed specifications including make and model for (H-20) traffic-rated covers for septic tanks proposed to be located within traffic areas.*
5. *A detailed profile cross-section of the wastewater system clearly showing the plumbing from building stub out to the effluent disposal well achieving the minimum invert connection specified above. (Alternatively details of proposed lift station shall be required)*
6. *The Water Authorities updated 2020 effluent disposal well specifications.*
7. *A 30ft horizontal separation between the effluent disposal well and any stormwater*

drainage wells.

Water Supply

The proposed development site is located within the Water Authority's piped water supply area.

- *The developer shall contact Water Authority's Engineering Services Department at 949-2837, without delay, to be advised of the site-specific requirements for connection to the public water supply.*
- *The developer shall submit plans for the water supply infrastructure for the development to the Water Authority for review and approval.*
- *The developer shall install the water supply infrastructure within the site, under the Water Authority's supervision, and in strict compliance with the approved plans and Water Authority Guidelines for Constructing Potable Water Mains. The Guidelines and Standard Detail Drawings for meter installations are available via the following link to the Water Authority's web page: <http://www.waterauthority.ky/water-infrastructure>.*

The Authority shall not be held responsible for delays and/or additional costs incurred by the developer due to the developer's failure to provide sufficient notice to the Authority.

National Roads Authority

As per your memo dated September 16th, 2020 the NRA has reviewed the above-mentioned planning proposal. Please find below our comments and recommendations based on the site plan provided.

Wall

The NRA advises the CPA that the six (6) ft. wall should be either set back at least four (4)ft. from the boundary line and/or reduced in height to allow for decent sight line visibility coming out of the driveways, per NRA guidelines.

4.6.3 SIGHT DISTANCE:

The minimum intersection sight distances as measured from a point 15 feet back along the centreline of the minor road and three and one half feet (3 1/2') above the road surface shall be one-hundred and fifty feet (150') and, two-hundred and thirty feet (230') for major road speed limits of 25 MPH and 30 MPH respectively, as measured along the near edge of the running carriageway.

Road Capacity Issues

The impact of the proposed development onto Rum Point Road is considered to be minimal.

Access and Traffic Management Issues

One-way driveway aisles with diagonal parking shall be a minimum of twelve (12) to sixteen (16) ft wide.

Entrance and exit curves shall have no less than fifteen (15) feet radius curves

Tire stops (if used) shall be placed in parking spaces such that the length of the parking space is not reduced below the sixteen (16) feet minimum.

Stormwater Management Issues

*The applicant is encouraged to implement state-of-the-art techniques that manage stormwater runoff **within the subject parcel** and retain existing drainage characteristics of the site as much as is feasible through innovative design and use of alternative construction techniques. However, it is critical that the development be designed so that post-development stormwater runoff **is no worse than** pre-development runoff. To that effect, the following requirements should be observed:*

- *The applicant shall demonstrate, prior to the issuance of any Building Permits, that the Stormwater Management system is designed to embrace storm water runoff produced from a rainfall intensity of 2 inches per hour for one hour of duration and ensure that surrounding properties and/or nearby roads are not subject to stormwater runoff from the subject site.*
- *The stormwater management plan shall include spot levels (existing and finished levels) with details of the overall runoff scheme. Please have applicant provide this information prior to the issuance of a building permit.*
- *Construct a gentle 'hump' at the entrance/exit (along the entire width of each driveway) in order to prevent stormwater runoff from and onto Rum Point Drive. Suggested dimensions of the 'hump' would be a width of 6 feet and a height of 2-4 inches. Trench drains often are not desirable.*
- *Curbing is required for the parking areas to control stormwater runoff.*
- *Roof water runoff should not drain freely over the parking area or onto surrounding property. Note that unconnected downspouts are not acceptable. We recommend piped connection to catch basins or alternative stormwater detention devices. If catch basins are to be networked, please have applicant to provide locations of such wells along with details of depth and diameter prior to the issuance of any Building Permits.*

At the inspection stage for obtaining a Certificate of Occupancy, the applicant shall demonstrate that the installed system will perform to the standard given. The National Roads Authority wishes to bring to the attention of the Planning Department that non-compliance with the above-noted stormwater requirements would cause a road encroachment under Section 16 (g) of The Roads Law (2005 Revision). For the purpose of this Law, Section 16(g) defines encroachment on a road as

"any artificial canal, conduit, pipe or raised structure from which any water or other liquid escapes on to any road which would not but for the existence of such canal, conduit, pipe or raised structure have done so, whether or not such canal, conduit, pipe or raised structure adjoins the said road;"

Failure in meeting these requirements will require immediate remedial measures from the applicant.

Department of Environmental Health

1. *The Department has no objection to the proposed in principal.*
2. *A swimming pool application must be submitted for review and approval. Specifications for all equipment must be included within the application.*

Department of Environment (NCC)

Under delegated authority from the National Conservation Council (section 3 (13) of the National Conservation Law, 2013), the Department of Environment (DoE) offers the following comments for your consideration.

As the subject parcel is located on a coastline with a fringing reef and shallow lagoon, and the historic aerial imagery of this site indicates that the coastline is stable the Department confirms that the coastal setback variance is acceptable in this case. However, the stability of this coastline is assisted by the presence of mature coastal vegetation. The Department therefore strongly recommends that the existing coastal vegetation that will be seaward of the proposed structures should be retained, in order to maintain the stabilisation of the coastline. Beach access should be allowed by the clearing of narrow tracks through the vegetation or by boardwalks and any sand excavated during the proposed construction works should remain on the site, and be used to nourish the beach.

Fire Department

Stamped approved plans

APPLICANT'S LETTER

See appendix I

PLANNING DEPARTMENT ANALYSIS

General

The application site is located in the Northside area of the District in a Neighbourhood Commercial zone. The Caribbean Sea forms the northern boundary with vacant lots to the east and west. Rum Point Drive runs along the south providing access to the site, beyond this a derelict site exists.

The application seeks planning permission for three houses, three swimming pools and 6' high solid wall.

Zoning

The property is zoned Neighbourhood Commercial.

Specific Issue

1) Suitability

- (i) Residential use v neighbourhood commercial

13(1)(b) of the Regulations defines Neighbourhood Commercial zones as those *'in which the primary use is a less intense form of development of that*

permitted in a General Commercial zone and which cater principally for the needs of persons, resident in, or in the vicinity of, the zone'.

Regulation 13(9) enables residential development in a neighbourhood commercial zone providing such is not on the ground floor of the building. As the application proposes houses the scheme does not comply with this Regulation.

The scheme is then reviewed under Regulation 13(10) whereby Part (a) enables residential development on all floors if the scheme is a replacement or redevelopment of an existing residential development. The application site is vacant therefore Part (a) does not apply.

The application is then considered against 13(10)(b) which permits residential development if the scheme represents a mixed-use development consisting of commercial and residential uses. The application seeks Planning Permission solely for the development of houses, therefore, this part of the Regulations do not apply either.

Neighbourhood Commercial zones aim to provide services to the local area to meet the needs of residents. Members are encouraged to reflect upon the availability of services and extent of Neighbourhood Commercial zone in assessing whether the loss to residential use is acceptable upon the community.

Members are invited to consider the support letter to establish whether adequate justification has been provided and an exceptional circumstance exists in order to vary the Regulations.

(ii) Density

The application proposes 3 houses.

Regulation 13 commercial zones is silent on density requirements for residential development. Logically the surrounding area is assessed with regards to guiding an appropriate level of density. The application site forms the edge of the Neighbourhood Commercial zone. Adjacent/nearby lots to the south and west is zoned Medium Density Residential (MDR). Applying MDR density levels to the application site would result in a minimum lot size of 7,500 sq ft per dwelling, resulting in a minimum requirement of 22,500 sq ft to support the current application. The application site measures 26,136 sq ft.

2) High Water Mark Setback

Regulation 8(10)(h) states in a neighbourhood commercial zone a minimum setback of 50' from the high water mark is required, which is conducive to a non-residential use.

The application proposes residential on the ground floor which is non-compatible with water. This presents a higher risk to life and property during storm events. Furthermore, the shoreline is not considered to be ironshore. Inundation from water would be anticipated during a storm event.

Residential development where the shoreline is beach requires a minimum of 75' from the high water mark.

Members are invited to reflect upon the term 'minimum' in the Regulations – this term enables application of higher setbacks where appropriate.

Consequently, members are asked whether a 75' setback should be sought from the development due to the shoreline being a beach and the proposal is 100% residential use.

3) 12' v 20' setback variance

Regulation 8(5) states setbacks are to be measured to septic tanks. Regulation 8(8)(b) requires a minimum setback of 20' from the road.

The proposed septic tanks are sited 12' from the front boundary.

Members are invited to consider the variance letter and determine whether an exceptional circumstance exists to justify the proposed setback encroachment.

4) 6' boundary wall and parking

Regulation 8(1)(viii) requires a minimum of 3 parking spaces for the development. The scheme proposes 3 parallel parking spaces providing adequate manoeuvring into and out of the site in forward gear.

The proposal incorporates a 6' high boundary wall sited 4' from the road frontage. Members are invited to consider the acceptability of such in light of section 4.4.1 of the Wall and Fence guidelines which stipulates no part of the solid wall should exceed 48" in height.

Members are invited to consider whether the location of the wall is acceptable and if an opportunity exists to re-site the wall to open up the frontage providing enhanced visibility into and out of the site.

2.13 BROOKE NOWACK (Abernethy & Associates Ltd) Block 56B Parcel 102 (F20-0281) (P20-0566) (\$2837) (JP)

Application for 2 lot subdivision.

FACTS

<i>Location</i>	School House Lane, Breakers
<i>Zoning</i>	LDR
<i>Notification result</i>	No objectors
<i>Parcel size proposed</i>	1.30 ac. (56,628 sq. ft.)
<i>Parcel size required</i>	10,000 sq. ft.
<i>Current use</i>	Residential
<i>Proposed building size</i>	43,806 sq. ft.
<i>Total building site coverage</i>	3.78%

Recommendation: Discuss the application for the following reason:

- 1) Lot width variance 62' 5" v 80'

AGENCY COMMENTS

Comments from the Water Authority, National Roads Authority and Department of Environment (NCC) are noted below.

Water Authority

Water Supply

The proposed development site is located within the Water Authority's piped water supply area.

- *The developer shall contact Water Authority's Engineering Services Department at 949-2837, without delay, to be advised of the site-specific requirements for connection to the piped water supply.*
- *The developer shall submit plans for the water supply infrastructure for the development to the Water Authority for review and approval.*
- *The developer shall install the water supply infrastructure within the site, under the Water Authority's supervision, and in strict compliance with the approved plans and Water Authority Guidelines for Constructing Potable Water Mains. The Guidelines and Standard Detail Drawings for meter installations are available via the following link to the Water Authority's web page: <http://www.waterauthority.ky/water-infrastructure>.*

The Authority shall not be held responsible for delays and/or additional costs incurred by the developer due to the developer's failure to provide sufficient notice to the Authority.

Wastewater Treatment

- *The developer is advised that wastewater treatment and disposal requirements for built development are subject to review and approval by the Water Authority.*

If there are questions or concerns regarding the above, please email them to: development.control@waterauthority.ky

National Roads Authority

No comments received.

Department of Environment (NCC)

Under delegated authority from the National Conservation Council (section 3 (13) of the National Conservation Law, 2013), the Department of Environment offers the following comments for your consideration.

The Department has no objections to the proposed subdivision. However, we note that the site consist of primary habitat (seasonally flooded mangrove forest wetland). Primary habitat is mature habitat in its natural state, otherwise uninfluenced by human activity where ecological processes are not significantly disturbed. These habitats are often very old, existing long before humans and may consist of many endemic and ecologically

important species. Given the Director of Planning's confirmation that permission to subdivide land confers the right to also clear all land within the application site boundary, we strongly recommend that the clearing and filling of the wetland section of the parcels should not occur without separate consultation with the National Conservation Council.

APPLICANT'S LETTER

Enclosed please find the relevant documents relating to a 2-lot subdivision. The purpose of the subdivision is for the proprietor to give land to his daughter so she can construct her own house. We are asking for a variance on the lot width on a portion of lot B under the Planning Regulation 8(13) (b) (iii) to accommodate this.

PLANNING DEPARTMENT ANALYSIS

General

The application site is located in the Breakers area of Grand Cayman. The Caribbean Sea forms the southern boundary and vacant lots bound the remaining perimeters.

The application seeks Planning Permission for a two lot subdivision

Zoning

The property is zoned Low Density Residential.

Specific Issue

1) Lot width variance 62' 5" v 80'

Regulation 9(8)(g) requires a minimum lot width of 80'.

The southern section of lot B would measure 62' 5".

Members are invited to consider the variance letter in determining whether exceptional circumstance exists to vary the Regulations.

2. 14 DALTON DUNKLEY (Triple J Construction) Block 59B Parcel 49 (F17-0201) (P20-0881) (\$600,000) (MW)

Application for duplex; 3,684 sq. ft. with lot size variance.

FACTS

<i>Location</i>	Eagle St., North Side
<i>Zoning</i>	Low Density Residential
<i>Notification result</i>	No objections
<i>Parcel size proposed</i>	0.23 ac. (10,018.8 sq. ft.)
<i>Parcel size required</i>	12,500 sq. ft.
<i>Current use</i>	Vacant
<i>Proposed building size</i>	3,684 sq. ft.

<i>Total building site coverage</i>	23.7%
<i>Required parking</i>	2
<i>Proposed parking</i>	2

BACKGROUND

July 21, 2017 – House 705 sq. ft. - the application was considered and it was resolved to grant planning permission.

Recommendation: Discuss the application, **for the following reason:**

- 1) Lot Size (10,018.8 sq. ft. vs 12,500 sq. ft.)

APPLICANT’S LETTER

With respect to our submission for a duplex building on 59B 49 located on the corner of Eagle Street and Constantine Street in Frank Sound, North Side. We hereby request variances as follows:

1. *Lot Size Variance for Proposed Duplex development on a parcel that is less than the required 12,500 sq. ft. lot size required for a duplex. The subject parcel is 10018 sq. ft., which is 2482 sq. ft. below the minimum lot size required.*

In making the application for such a variance, our client is mindful of provisions of Regulations 8

(13) of the Development and Planning Regulations, and would submit that there is sufficient reason and exceptional circumstances that would permit such setback allowance, in that:

- (i) The characteristics of the proposed development are consistent with the character of the surrounding area.*
- (ii) The proposed structures will not be materially detrimental to persons residing in the vicinity, to the adjacent properties, or to the neighboring public welfare.*

Additionally, please also take into consideration that:-

1. *The development will appear to be a single-family residence with a 3155 sf main house primarily and a 529 sf 1 bedroom dwelling attached and integrated into design.*
2. *The owners are parents to 6 children, one of which is a young adult for whom the 1 bedroom dwelling will be available to reside within.*

3. *The development meets the boundary setbacks, site coverage and building height requirements*

We thank you for your consideration of this matter and look forward to a favourable decision on this application in due course.

PLANNING DEPARTMENT ANALYSIS

General

The application is for a Duplex; 3,684 sq. ft. with a lot size variance to be located on the corner of Eagle St. & Constantine St., North Side.

Zoning

The property is zoned Low Density Residential and the Department would offer the following comments regarding the specific issue noted below.

Specific Issues

1. Lot Size

Regulation 9(8)(e) states “*the minimum lot size for each duplex shall be 12,500 sq. ft.*”. The proposed lot is currently 10,018.8 sq. ft. a difference of 2,481.2 sq. ft. respectively.

The adjoining parcels were notified and no objections were received.

The Authority should assess if there is sufficient reason and an exceptional circumstance that exists in accordance with Section 8(13) to warrant granting a lot size variance.

2.15 TIM & PAULA CONE (Robert Towell) Block 17A Parcel 105 (P20-0906) (\$1,200,000.00) (EJ)

Proposed duplex, swimming pool, wall/gate and dock

FACTS

<i>Location</i>	Crighton Drive
<i>Zoning</i>	LDR
<i>Notification result</i>	None
<i>Parcel size proposed</i>	0.4629 ac. (20,164 sq. ft.)
<i>Parcel size required</i>	12,500 sq. ft.
<i>Current use</i>	Vacant
<i>Proposed building size</i>	4,056.56 sq. ft.
<i>Total building site coverage</i>	13.44%
<i>Allowable units</i>	1
<i>Proposed units</i>	1
<i>Allowable bedrooms</i>	NA

<i>Proposed bedrooms</i>	NA
<i>Required parking</i>	2
<i>Proposed parking</i>	4

Recommendation: Discuss the application, for the following reasons:

- 1) Wall roadside

AGENCY COMMENTS

Comments from the Department of Environment (NCC) are noted below.

Department of Environment (NCC)

“Under delegated authority from the National Conservation Council (section 3 (13) of the National Conservation Law, 2013), the Department of Environment (DoE) offers the following comments for your consideration.

The subject parcel is man-modified and of limited ecological value. We note the inclusion of a boat dock on the plan, however, it is unclear whether the dock forms a part of this application. There have been no specifications or dock details included with the application and the application’s description does not include a dock.

Nevertheless, best management practices should be adhered to during construction; these include but are not limited to:

- *Any stockpiled materials being kept away from the canal edge to reduce the possibility of rainwater runoff washing material and debris into the canal causing turbidity and impacting water quality;*
- *A minimum dock height of 4 feet and the installation of dock decking with a minimum of 1/2 inch spacing between decking boards to allow light penetration to occur to support marine life under the dock;*
- *The dock construction area being fully enclosed with silt screens with a 4-foot minimum skirt depth to contain any sedimentation or debris arising from construction of the dock; and*
- *The silt screens being left in place until the water contained inside the screens has cleared to the same appearance as the water immediately outside of the screens.*

We also recommend that the applicant plants and incorporates native vegetation into the landscaping scheme. Native vegetation is best suited for the habitat conditions of

the Cayman Islands, resulting in vegetation that requires less maintenance which makes it a very cost- effective choice.”

PLANNING DEPARTMENT ANALYSIS

General

The applicant is seeking permission for the proposed four-bedroom duplex, swimming pool, fire-pit, 4’ wall/gate and dock.

Zoning

The property is zoned Low Density Residential.

Specific Issue

While the proposed meets all setback requirements for the duplex, swimming pool, fire-pit and no concerns for the 6’ x 40’ dock;

1) Gate Setback

The proposal has a 4’ concrete wall with a gate setback 16’ from the Crighton Drive and a 4’ fence along the sides side and rear boundary; Mindful, that the Authority wishes to see all application with a wall or fence on the road.

2.16 STEPHEN CHIN & LYNNE CURRIE (MJM Design Studio) Block 22D Parcel 156 (P20-0846) (\$555,000.00) (EJ)

Application for proposed house, swimming pool, LPG tank & dock.

FACTS

<i>Location</i>	Woodstock Road in Red Bay
<i>Zoning</i>	LDR
<i>Notification result</i>	Objectors
<i>Parcel size proposed</i>	0.73 ac. (31,799 sq. ft.)
<i>Parcel size required</i>	10,000 sq. ft.
<i>Current use</i>	Vacant
<i>Proposed building size</i>	3,525 sq. ft.
<i>Total building site coverage</i>	7.65%
<i>Allowable units</i>	3
<i>Proposed units</i>	1
<i>Required parking</i>	1
<i>Proposed parking</i>	3

Recommendation: Discuss the application, **for the following reasons:**

1) Setback variances (6.5' vs 20')

AGENCY COMMENTS

Comments from the Department of Environment (NCC) are noted below.

Department of Environment (NCC)

“Under delegated authority from the National Conservation Council (section 3 (13) of the National Conservation Law, 2013), the Department of Environment offers the following comments for your consideration.

The site is man-modified with secondary growth. Therefore it is recommend to retain any mature native vegetation where possible and that native vegetation is incorporated into the landscaping scheme. Native vegetation is best suited for the habitat conditions of the site, requiring less maintenance and making a cost-effective and sustainable choice for landscaping.

The Department notes that the site is low lying and is prone flooding, as shown in Figure 1. Therefore a stormwater management plan should be designed for the site to ensure that any site derived runoff can be handled on site and does not impact surrounding properties or enter the canal.



Figure 1: Showing the Application site with rain water inundation (Source: DOE, 26 October, 2020)

In addition, best management practices should be adhered to during construction which include but are not limited to:

- *Any stockpiled materials should be kept away from the canal edge to reduce the possibility of rainwater runoff washing material into the canal.*
- *The dock construction area shall be fully enclosed with silt screens with a 4-ft minimum skirt depth to contain any sedimentation or debris arising from construction of the dock as depicted by the submitted site plan.*
- *The silt screens shall remain in place until the water contained inside the screens has cleared to the same appearance as the water immediately outside of the screens.*
- *The decking should have a half inch gap for light penetration between deck boards to allow marina flora or other marine life growth.”*

APPLICANT’S LETTER

With respect to our September 30th 2020 submission for a proposed 2 storey residence with garage attached. We hereby request a variance for side and rear setback from the canal inlet wall.

In making application for such a variance, our client is mindful of provisions of Regulations 8 (13) of the Development and Planning Regulations, and would submit that there is sufficient reason and exceptional circumstances that would permit such setback allowance, in that:

- (i) *The characteristics of the proposed development are consistent with the character of the surrounding area.*
- (ii) *The proposed structure will not be materially detrimental to persons residing in the vicinity, to the adjacent properties, or to the neighboring public welfare.*

PLANNING DEPARTMENT ANALYSIS

General

The applicant is seeking permission for the proposed two-bedroom house, swimming pool and dock with setback variances.

Zoning

The property is zoned Low Density Residential.

Specific Issue

Although, the proposal is on a 0.73 acre lot, the proposed does not meet the required setbacks from the canal.

1) Setbacks variance

The proposed house and swimming pool does not meet the required 20’ setback from the canal; with the garage being as close as 10’ from the canal and 6.5’ from the walkway; the side of house is proposed at 12.9’ and swimming pool deck at 7.6’ from the canal; therefore, the applicant is seeking several variance from the Authority.

2.17 GEORGE & MARCIA WRIGHT (GMJ HOME PLANS) Block 27D Parcel 291 (P20-0901) (\$160,000.00) (EJ)

Application for two-bedroom house addition to create a duplex

FACTS

<i>Location</i>	Bermuda Way
<i>Zoning</i>	LDR
<i>Notification result</i>	None
<i>Parcel size proposed</i>	0.1568 ac. (6,830 sq. ft.)
<i>Parcel size required</i>	12,500 sq. ft.
<i>Current use</i>	Two-Bedroom House
<i>Proposed building size</i>	1,187.24 sq. ft.
<i>Total building site coverage</i>	24%
<i>Allowable units</i>	1
<i>Proposed units</i>	2
<i>Required parking</i>	2
<i>Proposed parking</i>	3

BACKGROUND

February 22, 2006 - the Department granted permission for a two (2) bedroom house.

Recommendation: Discuss the application, **for the following reasons:**

1. Setback variance (13.1' vs 20') & (13' vs 15')
2. Lot size variance (6,830 sq. ft. vs 12,500 sq. ft.)

APPLICANT'S LETTER

We write on behalf of our clients, Mr. George Wright & Mrs Marcia Wright, with regards following variance;

- *A rear setback variance - The rear setback proposed is 13' which is less than required 20'.*
- *A side setback variance - The side setback to the left of the property is proposed 13'2" which is less than the required 15' for a two-story building.*

We request permission for the proposed development to remain as shown on the drawings provided and humbly give the following reasons:

1. *Per section 8(13)(d) of the Planning Regulations, the owners of the adjacent properties were notified by register mail;*

2. Per section 8(13)(b)(iii) of the Planning Regulations, the proposal will not be materially detrimental to persons residing or working in the vicinity, to the adjacent property, the neighborhood, or to the public welfare;

3. The application complies with all other relevant planning requirements.

PLANNING DEPARTMENT ANALYSIS

General

The applicant is seeking planning permission for the proposed two-bedroom, 2-storey addition with lot size variance and setback variances.

Zoning

The property is zoned Low Density Residential.

Specific Issues

1) Setback variances

The proposed two-storey addition to the rear of the existing house, does not meet the required rear setback (13.1' vs 20') and also does not meet the required right side setbacks (13' vs 20'); therefore, the applicant is seeking both rear and right side setback variances from the Authority.

2) Lot size variance

In addition to the setback variances, the applicant is seeking a lot size variance (6,830 sq. ft. vs 12,500 sq. ft.).

2.18 UPTON FORBES (PIONEER CONSTRUCTION) Block 43A Parcel 171 (P19-1009) (\$5,000) (EJ)

Application for after-the-fact 4' concrete wall, 46-gallon LPG tank, garage conversion and driveway design.

FACTS

<i>Location</i>	Boysberry Drive
<i>Zoning</i>	MDR
<i>Notification result</i>	N/A
<i>Parcel size proposed</i>	0.3028 ac. (13,189 sq. ft.)
<i>Parcel size required</i>	7,500 sq. ft.
<i>Current use</i>	Four (4) Bedroom House, ATF LPG Tank, Wall & Garage Conversion
<i>Proposed building size</i>	N/A
<i>Total building site coverage</i>	23.57%
<i>Required parking</i>	1

BACKGROUND

October 5, 2007 – the Department granted permission for a four (4) bedroom house with single garage.

Recommendation: Discuss the application, **for the following reason:**

- 1) Concrete wall on road side,

AGENCY COMMENTS

Comments from the National Roads Authority.

National Roads Authority

No comments received

PLANNING DEPARTMENT ANALYSIS

General

The applicant is seeking planning permission for an after-the-fact permission for four (4) concrete wall, LPG tank, change the garage to dining room and alteration to driveway design.

Zoning

The property is zoned Medium Density Residential.

Specific Issues

The applicant is seeking permission for the after the fact LPG tank, 4' concrete wall and an already enclosed garage conversion to dining room; therefore, the conversion has impacted the parking and driveway design which has increased in size; nevertheless, the department has no major concerns for this aspect of the application.

1) Wall on Roadside,

The applicant has constructed a four (4') concrete wall which is in line with other walls in the vicinity. However, the wall is around the entire perimeter of the property including Boysberry Drive. Therefore, the Authority is asked to consider the ATF wall. It should be noted that the property has been elevated about 2'-3" above the road level.

2.19 KIMBERLY MALCOLM (Genesis 3D Studio) Block 48C Parcel 261 (P20-0891) (\$311,400.00) (EJ)

Application four-bedroom house addition to create a duplex.

FACTS

<i>Location</i>	Perwinkle Drive
<i>Zoning</i>	LDR
<i>Notification result</i>	No Objections
<i>Parcel size proposed</i>	0.29 ac. (12,632 sq. ft.)
<i>Parcel size required</i>	12,500 sq. ft.
<i>Current use</i>	Four-Bedroom House
<i>Proposed building size</i>	2,076 sq. ft.
<i>Total building site coverage</i>	31.21%
<i>Allowable units</i>	1
<i>Proposed units</i>	1
<i>Allowable bedrooms</i>	NA
<i>Proposed bedrooms</i>	NA
<i>Required parking</i>	2
<i>Proposed parking</i>	4

BACKGROUND

August 12, 2003 – the Department granted permission for a four (4) bedroom house.

Recommendation: Discuss the application, **for the following reasons:**

- 1) Setback variance.
- 2) Over site coverage,

APPLICANT’S LETTER

My client, the owner of the above-named property is seeking planning permission for the four- bedroom duplex house addition which require set back variance.

The lot specified is in a low-density residential area. The setback variance specified for the low-density residential area is 15’’ for two storey building. We are seeking a minimum set back variance of 10’’ instead 15’’ that is required on the right-side boundaries.

In accordance with regulation 8(13)(b) of the Development and Planning Regulations (2018 Revision) a letter of variance must be submitted to the Department regarding the side setback, lot size, and lot width explaining that there is sufficient reason to grant a variance and an exceptional circumstance exists, which may include the fact that

- (i) the characteristics of the proposed development are consistent with the character of the surrounding area;*
- (ii) unusual terrain characteristics limit the site development potential; or the proposal will not be materially detrimental to persons*

PLANNING DEPARTMENT ANALYSIS

General

The applicant is seeking permission for a four-bedroom addition to the rear of the existing house to create a duplex with oversight coverage and setback Variance.

Zoning

The property is zoned Low Density Residential.

Specific Issues

1) Setback variance

The proposed two-storey addition is setback (10' vs 15') from the right side boundary; consequently, the applicant is seeking a setback variance from the authority.

2) Oversight coverage variance

In addition to the setback variance, the applicant is also seeking an over site coverage variance (31.21% vs 30%) or a 1.21% overage.

2.20 SAVANNAH BAKERY (Tony Lattie) Block 28C Parcel 419 (F07-0429) (P20-0781) (\$158,000) (MW)

Application to change of use from retail to bakery, 2 signs & LPG tank.

FACTS

<i>Location</i>	Hirst Rd., Bodden Town
<i>Zoning</i>	Neighbourhood Commercial
<i>Notification result</i>	No Objectors
<i>Parcel size proposed</i>	0.4157ac. (18,107.892 sq. ft.)
<i>Parcel size required</i>	20,000 sq. ft.
<i>Current use</i>	Existing Mixed Use Buildings (4,501.23 sq. ft.)
<i>Proposed building size</i>	611.61 sq. ft.
<i>Total building site coverage</i>	24.9%

Recommendation: Discuss the application for the following reasons:

- 1) Parking (18 spaces vs. 19 spaces)
- 2) Compliance to Sign Guidelines

AGENCY COMMENTS

Comments from the Water Authority, National Roads Authority, Department of Environmental Health and Department of Environment (NCC) are noted below.

Water Authority

Please be advised that the Water Authority’s requirements for this development are as follows:

Wastewater Treatment & Disposal

- *The developer shall provide a **septic tank(s)** with a capacity of at least **(2,500) US gallons** for the proposed, based on the following calculations:*

BUILDING	UNITS/BLDG	GPD/UNIT	GPD/BLDG	GPD
<i>Building A</i>	<i>2 x Retail Units</i>	<i>0.15gpd/sqft</i>	<i>182gpd</i>	<i>182gpd</i>
<i>Building B (First Floor)</i>	<i>DeBleu Salon</i>	<i>75gpd/Service Chair</i>	<i>450gpd</i>	<i>450gpd</i>
<i>-</i>	<i>Proposed Bakery</i>	<i>0.2gpd/sqft & 200gpd/WC</i>	<i>334gpd</i>	<i>334gpd</i>
<i>Building B (Second Floor)</i>	<i>4 x 1-Bed Units</i>	<i>150gpd/1-Bed Unit</i>	<i>600gpd</i>	<i>600gpd</i>
TOTAL				1,566gpd

- *The septic tank shall be constructed in strict accordance with the Authority’s standards. Each compartment shall have a manhole to allow for inspection and service. Manholes shall extend to or above grade and be fitted with covers that provide a water-tight seal and that can be opened and closed by one person with standard tools. Where septic tanks are located in traffic areas, specifications for a traffic-rated tank and covers are required.*
- *Treated effluent from the septic tank shall discharge to an effluent disposal well constructed by a licenced driller in strict accordance with the Authority’s standards. Licenced drillers are required to obtain the site-specific minimum borehole and grouted casing depths from the Authority prior to pricing or constructing an effluent disposal well.*
- *To achieve gravity flow, treated effluent from the septic tank shall enter the disposal well at a minimum invert level of 4’12” above MSL. The minimum invert level is that required to maintain an air gap between the invert level and the water level in the well, which fluctuates with tides and perching of non-saline effluent over saline groundwater.*

Grease Interceptor Required

A grease interceptor with a minimum capacity of 670 (US) gallons is required to pre-treat flows from kitchen fixtures and equipment with grease-laden waste; e.g., pot sinks, pre-rinse sinks; dishwashers, soup kettles or similar devices; and floor drains. The outlet

of the grease interceptor shall be plumbed to the sanitary sewage line leading to the Septic Tank.

Hair Interceptor Required

An approved Hair interceptor is required for Hair Salons. The developer is required to submit specifications to the Water Authority for determination of the required capacity of interceptor. Specifications can be sent via email to development.control@waterauthority.ky

Change-of-use with Existing Septic Tank

If the developer proposes to utilize the existing septic tank and/or disposal well, the system shall be inspected and serviced per the Septic Tank Inspection Form that can be downloaded from the Water Authority's website via the following link: <https://bit.ly/2RO8MBB>. The completed inspection form shall be returned to the Water Authority for review and determination as to whether the existing system meets Water Authority design specifications. Any deficiencies noted will require repair or replacement prior to final approval.

For Water Authority approval at BCU stage, a detailed profile drawing of the proposed wastewater treatment system is required. The drawing shall indicate:

- 1. If the proposed septic tank will be site-built or precast. (You may use the Water Authority drawing for site-built tanks available from the Authorities website or a Precast septic tank drawing if you intend to use a Precast Tank).*
- 2. All dimensions and materials shall be provided for any site-built tanks.*
- 3. Manhole extensions are permitted up to a maximum of 24" below finished grade.*
- 4. Detailed specifications including make and model for (H-20) traffic-rated covers for septic tanks proposed to be located within traffic areas.*
- 5. A detailed profile cross-section of the wastewater system clearly showing the plumbing from building stub out to the effluent disposal well achieving the minimum invert connection specified above. (Alternatively details of proposed lift station shall be required)*
- 6. The Water Authorities updated 2020 effluent disposal well specifications.*
- 7. A 30ft horizontal separation between the effluent disposal well and any stormwater drainage wells.*

Near Limit for Septic Tank(s)

The developer is advised that the proposed development on this parcel brings it close to the 1,800gpd limit allowed for treatment by septic tank(s). Further development on this parcel, including any change of use that increases the estimated wastewater flows (e.g. residential to commercial; low-water-use commercial to high-water-use commercial) will require that all wastewater generated on the parcel; i.e., from both proposed and existing structures, shall be treated in an onsite aerobic wastewater treatment system(s).

Water Supply

The proposed development site is located within the Water Authority's piped water supply area.

- *The developer shall contact Water Authority's Engineering Services Department at 949-2837, without delay, to be advised of the site-specific requirements for connection to the public water supply.*
- *The developer shall submit plans for the water supply infrastructure for the development to the Water Authority for review and approval.*
- *The developer shall install the water supply infrastructure within the site, under the Water Authority's supervision, and in strict compliance with the approved plans and Water Authority Guidelines for Constructing Potable Water Mains. The Guidelines and Standard Detail Drawings for meter installations are available via the following link to the Water Authority's web page: <http://www.waterauthority.ky/water-infrastructure>.*

The Authority shall not be held responsible for delays and/or additional costs incurred by the developer due to the developer's failure to provide sufficient notice to the Authority.

If there are questions or concerns regarding the above, please email them to development.control@waterauthority.ky

Department of Environmental Health

No Comments received at this time.

PLANNING DEPARTMENT ANALYSIS

General

The application is for a Change of Use from Retail to Bakery, 2 Signs & LPG Tank to be located on Hirst Rd., Bodden Town.

The parcels within a 300' radius were notified in addition to 2 newspaper ads and no objections were received.

Zoning

The property is zoned Neighbourhood Commercial. The proposed change of use is allowed in the zone. However the Department wishes to discuss the following.

Specific Issues

1) Parking

As the parking requirements for a bakery is 1 space per 200 sq. ft. A total of 3 spaces would be required for the proposed change of use (611.61 sq. ft. / 200 sq. ft. = 3.05 spaces). The existing mixed use plaza currently houses 6 units & 4 residential units on the second floor. (see parking calculations below)

Commercial 1 per 300 sq. ft.

Unit 1 = 538.12 sq. ft.	1.79 spaces (2 spaces)
Unit 2 = 538.12 sq. ft.	1.79 spaces (2 spaces)
Unit 3 = 611.61 sq. ft.	2.03 spaces

Unit 4 = 611.61 sq. ft.	2.03 spaces
Unit 5 = 611.61 sq. ft.	2.03 spaces
Unit 6 = 611.61 sq. ft.	3.05 spaces
<u>Total =</u>	(13 spaces)

Residential 1.5 per unit

Unit 1	1.5 spaces
Unit 2	1.5 spaces
Unit 3	1.5 spaces
Unit 4	1.5 spaces
<u>Total =</u>	6 spaces
Total =	19 spaces

The proposed development requires a total of 19 spaces.

The Board should be reminded that the existing plaza was approved with 19 spaces (P07-1135)(CPA/37/07; Item 2.9), however a modification application was submitted (P09-0138) (CPA/06/09; Item 8.1) and subsequently approved to reduce the number of parking spaces from 19 spaces to 18 spaces.

The Authority should assess if the proposed change of use with the less than required parking spaces is acceptable.

2) Compliance to Sign Guidelines

The applicant is proposing (2) signs one being 6.6 sq. ft. and the other being 13.3 sq. ft. mounted to the building surface. The proposed signs will be approximately 1'-8" in height with a width of 3'-11 3/4" and 8'-0 1/2" respectively.

The Department refers to Section 5.2 of the Sign Guidelines 2014:

b. Commercial Buildings (Single Tenant) – The total area of all fascia and window signs applied to any given façade shall not exceed 10% of the building façade, which includes window and door area.

2. 21 DAVENPORT DEVELOPMENT LTD (Davenport Development Ltd.) Block 25B Parcel 662 (P20-0914) (\$944,250) (AS)

Application for a house, pool & fence.

FACTS

<i>Location</i>	Poindexter Rd
<i>Zoning</i>	LDR
<i>Notice Requirements</i>	No objections
<i>Parcel Size</i>	.2325 acres (10,127 sq. ft.)

<i>Current Use</i>	Vacant
<i>Proposed Use</i>	Residential
<i>Building Size</i>	3,617 sq ft
<i>Building Coverage</i>	29.4%
<i>Proposed Parking</i>	2
<i>Required Parking</i>	1

Recommendation: Discuss the application **for the following reasons:**

- 1) Inland waterway setback (20' vs 10')
- 2) Front setback (20' vs 16')
- 3) Side setback (10' vs 5')

AGENCY COMMENTS

The application was sent to the National Roads Authority for comments. No comments have been received.

APPLICANT'S LETTER

“With respect to our submission for a House and Pool on 25B 662. We hereby request a variance in canal setback to allow:

Pool to be built 5 ft from the rear property boundary & 34 ft from the side boundary, with the pool deck right along the rear property boundary as illustrated on the submission plans.

1. *Front Porch to be built 16 ft from the front property boundary as illustrated on the submission plans.*

In making the application for such a variance, our client is mindful of provisions of Regulations 8 (13) of the Development and Planning Regulations, and would submit that there is sufficient reason and exceptional circumstances that would permit such setback allowance, in that:

- (i) *The characteristics of the proposed development are consistent with the character of the surrounding area.*
- (ii) *The proposed structures will not be materially detrimental to persons residing in the vicinity, to the adjacent properties, or to the neighbouring public welfare.*

PLANNING DEPARTMENT ANALYSIS

General

The application is for a two storey, 3,617 sq ft house, pool and 7 ft fence.

Adjacent parcels owners have been notified of the applicant's setback variance requests and the 7 ft fence. No objections have been received.

Zoning

The property is zoned Low Density Residential.

Specific Issues

1. Inland Waterway Setback

Regulations 8 (10) (d) states that...*in areas where the shoreline is an inland waterway, all structures and buildings, including ancillary buildings, walls and structures, shall be setback a minimum of twenty feet from the high water mark.*

2. Front Setback

Regulations 9(8)(i) states that minimum front and rear setbacks in LDR are 20 ft. The applicant proposes a front setback of 16 ft.

3. Side Setback

Regulations 9(8)(j) states that minimum side setback for a one storey structure is 10 ft. The applicant proposes a side setback of 5 ft. for the pool.

2.22 BAER DEVELOPMENT (Tropical Architectural Group Ltd.) Block 22E Parcel 458 (F98-0339) (P20-1015) (\$0) (MW)

Application for site modification: - from 6' wide sidewalk to 4' and from 4' wide landscape strip to 3'.

FACTS

<i>Location</i>	Carnation Ln., George Town
<i>Zoning</i>	Medium Density Residential
<i>Notification result</i>	No Objectors
<i>Parcel size proposed</i>	2.98 ac. (129,808.8 sq. ft.)
<i>Parcel size required</i>	20,000 sq. ft.
<i>Current use</i>	Approved apartments under construction

BACKGROUND

January 23, 2018 (CPA/02/19; Item 2.3) –the application was considered and it was resolved to grant approval.

August 7, 2019 – the application was considered and it was resolved to grant approval.

February 5, 2020 – the application was considered and it was resolved to modify planning permission.

September 15, 2020 – the *application was considered and it was resolved to modify planning permission.*

Recommendation: Discuss the application, **for the following reasons:**

- 2) Sidewalk width (4'-0" vs 6'-0")
- 3) Landscape width (3'-0" vs. 4'-0")

APPLICANT'S LETTER

Here is the photos that depict the close proximity of the fence and where cars normally park on the side of their house. This is why we have requested for the side walk to be 4 foot instead of 6 foot and the fact that the side walk only serve my project and goes nowhere else.

Any questions please contact me.





PLANNING DEPARTMENT ANALYSIS

General

The application is for a Site Modification; to reduce sidewalk from 6' to 4' and to reduce landscape strip from 4' to 3' to be located on Carnation Ln., George Town.

Zoning

The property is zoned Medium Density Residential.

Specific Issue

1) Sidewalk & Landscape Strip Width

Planning permission was granted for a 6-ft wide sidewalk with a 4-ft wide landscape strip, however, due to the width of the existing road "Carnation Ln (26'-5")." The applicant has constructed a 4' wide concrete sidewalk and 3-ft wide landscape strip. As a result, the applicant is seeking to modify planning permission as noted above.

The applicant has provided photos to accompany his request.

2.23 MERVYN FREDERICK (Whittaker & Watler) Block 75A Parcel 128 (F20-0366) (P20-0759) (\$4,500) (MW)

Application for land clearing by mechanical means (3 acres).

FACTS

<i>Location</i>	Off Farm Road., East End
<i>Zoning</i>	Agricultural Residential
<i>Notification result</i>	No Objectors
<i>Parcel size proposed</i>	22 ac. (958,320 sq. ft.)
<i>Parcel size required</i>	10,000 sq. ft.
<i>Current use</i>	Vacant

Recommendation: Discuss the application for the following reason:

- 1) Reason for Clearing

AGENCY COMMENTS

Comments from the Department of Environment (NCC) are noted below.

Department of Environment (NCC)

Under delegated authority from the National Conservation Council (section 3 (13) of the National Conservation Law, 2013), the Department of Environment offers the following comments for your consideration.

The application site consist of primary dry shrubland habitat and is partly man-modified. Given that no rationale has been provided for the clearing, the Department is uncertain of the end use for the property and does not support the speculative clearing of primary habitat. Therefore, the Department would strongly recommend that the man-modified areas be utilized first and primary vegetation is retained. As shown in Figure 1, the proposed area of clearing are not within the man-modified portions of the site. We would strongly encourage clearing to be kept to the previously disturbed areas.



Figure 1: LIS 2018 aerial imagery showing application parcel outlined in blue with proposed land clearing in red and man-modified section of parcel outlined in yellow

Please do not hesitate to contact the Department should you require further assistance.

PLANNING DEPARTMENT ANALYSIS

General

The application is for a Land Clearing (3 Acres) by mechanical means to be located off Farm Rd., East End.

Zoning

The property is zoned Agricultural Residential.

Specific Issues

1) Reason for Land Clearing

The Board should assess the reasoning for clearing (3 Acres) by mechanical means. The applicant has stated the reasoning for the land clearing will be to grow grass to feed cows on the site. The proposed debris will be used to fill the low lying areas on site.

The adjoining parcels were notified and no objections were received

2.24 RF BANK & TRUST (Kariba Architecture and Interiors) Block 12E Parcel 103 (P20-0850) (\$1,000.00) (BES)

Application for one sign attached building façade.

FACTS

<i>Location</i>	Fidelity Financial Centre Building
<i>Zoning</i>	N.COM
<i>Notice results</i>	No Objectors
<i>Parcel Size Proposed</i>	0.699 ac or (30,448.4 sq ft)
<i>Proposed Use</i>	Sign

BACKGROUND

(CPA/26/19; Item 2.33) – CPA granted planning permission for 2-signs,

Recommendation: Grant planning permission

PLANNING DEPARTMENT ANALYSIS

General

The application is for a sign (18-sq ft) to be attached on the building facade at the above-captioned property. The site is located at the Fidelity Financial Centre Building on West Bay Road.

Zoning

The land is zoned Neighbourhood Commercial

Specific Issue

a) Sign attached on Building Facade

The sign is approximately 18-sq. ft. to be erected on the front building façade facing Galleria Plaza and West Bay Road. There is no concern with the application.

3.0 DEVELOPMENT PLAN MATTERS

4.0 PLANNING APPEAL MATTERS

5.0 MATTERS FROM THE DIRECTOR OF PLANNING

6.0 CPA MEMBERS INFORMATION/DISCUSSIONS

Appendix 'A'

ISLAND DRAFTING & ENGINEERING LTD.

Unit C2, Cayman Business Park, George Town
P.O. Box 80, Grand Cayman KY1-1601,
Tel: (345) 947-4377/916-0967 Fax: (345) 947-4377
Cayman Islands, B.W.I.
E-mail: isldraft@candw.ky

September 26, 2020

Haroon Pandohie
Director of Planning
P.O Box 113
Grand Cayman.KY1-9000
Cayman Islands

Dear Sirs,

RE: Addition to Existing Duplex to Create Three Apartments located on Registration Section West Bay North West, Block 4D Parcel# 40, Lot Size Variance, Bedroom Variance and Lot Width (Variance).

We have submitted an application on behalf of Raglan Roper to modify an existing duplex which have existed before the passing of hurricane Ivan in 2004, the owner Mr. Raglan Roper has applied to the central planning authority for approval to add an additional residential unit which would classify the proposal as an apartment complex of three units.

The building that exist presently is a two storey building (Duplex), which the setback will not be altered from what is the existing foot print presently, the ground floor will be modification internally on the existing ground floor plan which have been submitted for approval.

And not withstanding regulation 8 (13) (b) (iii) that the proposal will not be materially detrimental to persons residing or working in the vicinity, to the adjacent property, to the neighborhood, or to the public welfare;

And not withstanding regulation 8 (13) (d) in the case of an application where lesser setbacks are proposed for a development or a lesser lot size is proposed for a development, the adjoining property owners have been notified of the application

With the registered area of this parcel being 0.20 Acreage which has an area of (8,712.00 Sq. Ft.). Which the proposed parcel/development will fall short of the required 20000, 00 Sq. Ft. (M.D.R), by about (11,288.00 Sq. Ft.), with regards to the lot width being

less than the required 100'-0" at the front (76'-1") and rear (71'-2") of the property which is serviced by the access off Mount Cl. Rd the width which is approximately 15'-1" the parcel which show a registered width which will fall short of the current regulation 2016 @ by approximately 23"-1" front and 28"-10" rear respectively, taking into consideration that some of the parcels within the area are approximately the same width and size with similar apartments constructed within the area.

The department has also mentioned the fact that the application was presented for approval on October 17, 2018 and the application was refused due to the road access width being smaller than the required minimum width which I presume would be 22'0" wide, which when the subdivision was first created the width of the road presently may have been the minimum requirements back in the 70,s I would find it extremely difficult to have to ask the client to widen the road to the minimum requirements presently obtained.

The parking required for this proposal would be (5) five parking spaces, the applicant is providing (8) parking spaces, although they do not function on the particular property by reversing and turning on this parcel, this is because the building as it is presently exist does not allow the ability to provide the parking to function on this parcel as required by the development and planning regulations.

Having mentioned the above, we would like to request a variance which would allow the board of central planning authority the right to grant the requested planning approval for the bedroom count variance, lot width variance, lot size variance and road width variance which the road has existed at the present width from when the subdivision was first established for trafficking of vehicles.

The room count was also mentioned as being over the minimum requirements on this particular parcel and the proposal which is 15 bedrooms, I will also request that the present bedroom count should be allowed as submitted.

Also of note there are already various existing apartments located within the immediate area.

We would appreciate the central planning authority board's favorable decision to this request to allow the proposed increase to the building to increase the building to three apartments to be approved as submitted.

Yours Faithfully,

Per: 

Arnold T. Berry
Island Drafting Engineering Ltd

Carent Enterprises Ltd.

PO Box 2432
Grand Cayman, KY1-1105
CAYMAN ISLANDS
PH: 345-946-5396 E-MAIL: havclub@ropers.ky

October 30, 2020

The Director of Planning
P.O Box 113
133 Elgin Avenue
Government Administration Building
George Town
Grand Cayman

Dear Sirs,

Re: Application for Planning Permission to Existing Duplex to increase to (3) three Apartments located on block 4D Parcel#40.

I write this letter in support of my planning application which I am in the process of adding to the second floor and with internal modifications since the passing of hurricane Ivan in 2004,

I would like to point out that I have been the owner of this property since November 1976 and I have maintained a very friendly atmosphere with my neighborhood, presently my residence is being used as storage.

My application for planning permission is for me to provide living accommodation for some of my staff members to be able to live at a location which is central to me as some of the places where they presently reside are not really fit for human habitation. I will be providing some efficiency studio units and a small central utility room at the rear of the building for the staff only to utilize. I will also point out that I am the owner of an established business Roper Enterprises Ltd and I have a staff complement of approximately 100 and would like to offer some of the staff member reasonable accommodation.

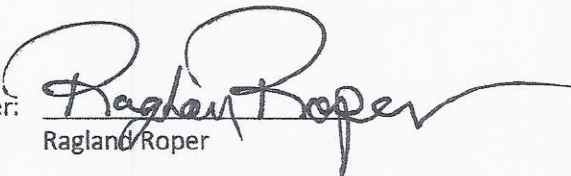
The staff members that will be accommodated will be transported to and from this location to their place of work which is Roper Enterprises Ltd. by a company provided bus. This is another reason that the proposal is being submitted for a central location for my staff members.

Also within the immediate area there exist other apartment complexes of similar size.

I trust that the information provided would meet the Central Planning Authority Board satisfaction to allow the proposed application to be approved as submitted.

I can be reached for further clarity if required at the above mentioned number or on my cell phone 916-2563.

Respectfully Yours,

Per: 
Raglan Roper

Appendix 'B'



kariba

ARCHITECTURE & INTERIORS

www.evolvingisland.com

(345) 233 1551
queries@evolvingisland.com

November 5th 2020

Central Planning Authority
Government Administration Building
Grand Cayman,
Cayman Islands.

Attention: Director of Planning, Mr. Haroon Pandohie

Dear Sirs

Re: Response to Objections to Botanic Farms Project P20-0723 59B 71

Following receipt of objections to the above project from the National Trust and the Tourist Attractions Board, please accept this letter and revised (submitted) drawings as our response.

Prior to addressing the objector's concerns, we would like to introduce the project to you:

The proposed Botanic Farms project proposes a hydroponic farming facility in response to the need for Grand Cayman to become more self-sufficient through the production of locally grown foods for sale to local grocery stores and the general public.

This initiative for sustainable, organic local farming has been encouraged for many years by the general public, elected Members of the Legislative Assembly as well as Government Authorities. To quote the DOA website:

"The Department of Agriculture seeks to develop sustainable agricultural production in order to promote measures of self-sufficiency and food security (compatible with economic reality) for the Cayman Islands."

The intention of this Farm project is to provide a sustainable facility that begins to address this growing need in Cayman, both now, and as it develops in the future.

We have received 2 objections to the project, as well as some useful comment from the Department of Environment.

The two objections are from the Chair of the Tourist Attractions Board and the Director of the National Trust.

The National Trust's objection appears to relate to the undisturbed natural habitat on the parcels adjacent to the Botanic Park entrance as well as the proximity to the Botanic Park (as "valuable tourism product"). They have suggested that proposed development be relocated on other parcels owned by the same developer and also suggested that the National Trust be offered a long term lease on the parcels of land adjacent to the park entrance.

The Chairperson of the Tourism Attractions Board objection appears to mirror the concerns and suggestions of the National Trust in terms of relocating the Farm to alternate parcels of land.



kariba
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www.evolvingisland.com

(345) 233 1551
queries@evolvingisland.com

To respond to the specific concerns of the Objectors we submit the following:

Compatibility with the Tourism Product:

The proposed Farm will provide a natural synergy with the Botanic park as a tourism product (with its Garden centre shop) and falls in line with sustainability and promotion of local self-sufficiency. We believe that it is likely that a large percentage of local or overseas visitors to either the Park or the Farm will likely stop to visit both facilities on the same trip.

We contend that a farm facility that offers both locals and tourists alike the opportunity to visit and learn about the local farming and its integration with the community as well as buy some fresh locally grown, organic Fruits and Vegetables could be a benefit as an additional complimentary attraction in the immediate area to the Botanic Park.

The parcels that this project is proposed on are Zoned **Agricultural** for Use and what better development to encourage, than a farm. Farming and "Park" type tourism co-exist harmoniously worldwide, and we believe that the sustainable and self-sufficient nature of a hydroponics farm is natural complimentary adjacent development to the Botanic Park.

Natural Vegetation Buffer to parcel frontage.

We recognize that the road to the Botanic Park and its entrance and car park is very "natural" and that buildings and large entrances may detract from the current experience - To this end the **revised plan** submitted shows a 20' buffer of undisturbed natural vegetation along the entirety of the road front to the parcel and proposed farm and clearing will be a minimum of 20' away from the road and the buildings are shown at a minimum of 70' away from the road.

This natural vegetation buffer is in line with the suggestions from the Department of Environment and with the exception of the entrance and exit to the site, the roadside boundary will be undisturbed in these proposals.

Location of the farm building on other parcels owned by the same developer

The revised plan (attached) shows no current development on the parcel closest to the Botanic park entrance (59A 312) This parcel is now being left undeveloped for now and we have shown the property as orchard space.

It is most unusual for an objector to propose that a development be relocated to alternate parcels under the same ownership while suggesting that a long-term lease be provided to them (the objectors) for the parcel that is the subject of their objection. That notwithstanding the developer has agreed to move the proposed farm away from the entrance to the Botanic Park and is willing to entertain an offer from the National Trust to purchase parcel 59A312.

As mentioned above we have adjusted the Project Plans so as to address the objections and have submitted them with this letter to the CPA for consideration.



We look forward to presenting these responses to the objections to the CPA at a convenient time.

Faithfully,

Derek Serpell

Kariba Architecture and Interiors

Tel 516 1551
derek@evolvingisland.com

kariba

ARCHITECTURE & INTERIORS

www.evolvingisland.com

(345) 233 1551
queries@evolvingisland.com

Appendix 'C'

Peacey, Jessica

From: Carla Reid <sofar@candw.ky>
Sent: Wednesday, October 28, 2020 4:50 PM
To: Department of Planning
Cc: Peacey, Jessica; Patrick Thompson (TAB); John Lawrus; 'National Trust Director'
Subject: Botanic Farms Ltd - P20-0723 59B 71
Attachments: BP 1.jpg; BP 2.jpg; BP 3.jpg; Botanic Farm maps.docx

Dear Sir/Madam,

I write on behalf of the Tourism Attraction Board (TAB) which has management responsibility for the QEII Botanic Park. The Manager of the Botanic Park has had some initial correspondence with the department and has also inspected the plans. Based on that inspection, the TAB is of the view that it would negatively impact the Botanic Park to have the property along entrance cleared and marred by unsightly commercial buildings. We would ask therefore that a sufficient natural vegetation buffer be maintained along the road on Parcel 59A 72, 313 and 312 so that the warehouse and other buildings are not visible from the road. Additionally, as it is anticipated by the plans that there will be truck/trailer traffic along the Botanic Park Rd we are asking that the entrance presently located on parcel 313 be relocated. It should also be noted that this road is used by residents in the neighbourhood for exercise purposes.

For your ease of reference please find attached photos. BP1 shows the road frontage along Parcel 72 and leading to the Park, BP2 shows the road frontage of parcel 313 leading to the park entrance and BP3 shows the road frontage of parcel 312 which is the royal palm entrance to the park. Without the benefit of survey markers these are estimations of where the parcels are. Also attached are maps showing the four parcels affected by the application on page one and the remainder of the property which is not included in the proposal on page 2. It is apparent from arial photography that Parcels 68, 69 and 70 might be better suited for use as a commercial farm as it is on the straight portion of the Botanic Park Road and is approximately the same size as the area in the application.

I would be happy to attend the planning meeting for this matter.

Many thanks
Carla Reid

Chairperson
Tourism Attraction Board

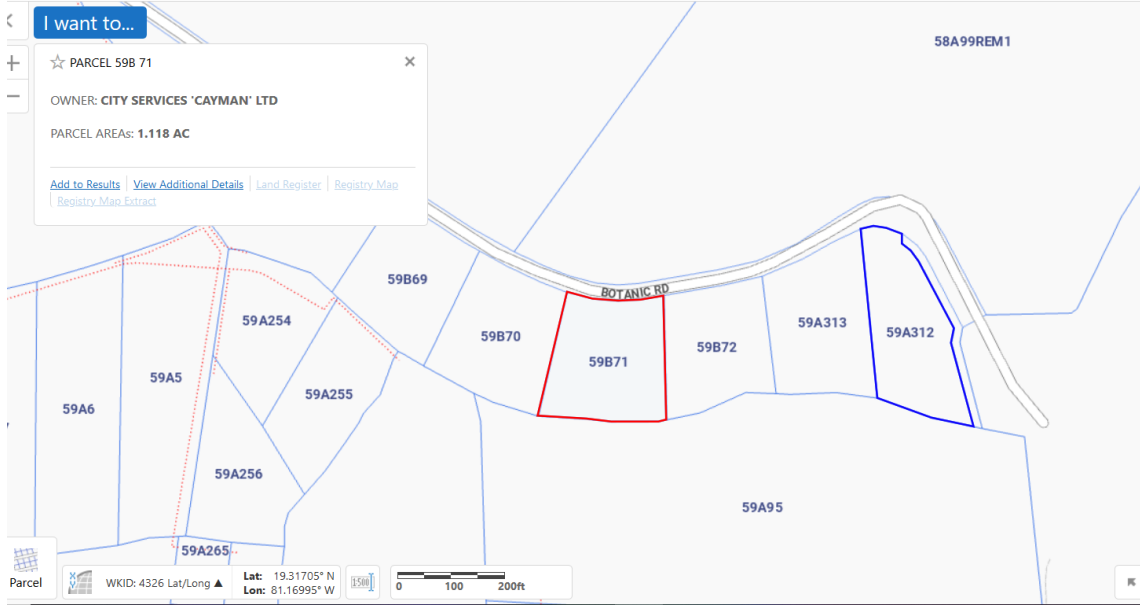








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Layers Tasks Analysis



Peacey, Jessica

From: Environment <Environment@nationaltrust.org.ky>
Sent: Tuesday, October 27, 2020 10:34 AM
To: Department of Planning; Pandohie, Haroon
Cc: National Trust Director; pmdavey@candw.ky; Peacey, Jessica
Subject: Comment on Planning Application - Botanic Farms
Attachments: NTCI_ObjectionLetter_Botanic Farms_Oct2020.pdf; City Services Cayman Ltd (Botanic Farm) parcels.png

Dear Mr. Pandohie,

Please find the attached response to the Planning Application for parcels 59A312, 59A313, 59E71, and 59B72, owned by City Services "Cayman" Ltd. The National Trust is a neighbouring landowner through the Queen Elizabeth II Botanic Park, a tourism asset whose integrity must be preserved. We therefore respectfully request that the proposed neighbouring farming operation be moved further from the Park boundaries. We feel certain that this minor alteration will benefit both the farm and the Park, and by extension, the people of the Cayman Islands. Please read our attached letter for further explanation. We are grateful for the opportunity to comment and hope that we can reach a satisfactory resolution to this issue that will satisfy all parties, as well as the community as a whole.

Kind Regards,
Catherine Childs



Catherine Childs
Education Manager - Island Offsets - Cayman Sea Sense

find a place in your heart for CONSERVATION.


@nationaltrust_cayman

558A South Church Street
PO Box 31116, South Sound, Dart Park
Grand Cayman KY1-1205

direct: 345-749-1129
office: 345-749-1121
email: education@nationaltrust.org.ky
nationaltrust.org.ky



October 26, 2020

Director of Planning
PO Box 113
Grand Cayman KY1-9000
Via email: planning.dept@gov.ky

Dear Sir,

Application to Create a Farm on Block and Parcels 59A312, 59A313, 59E71, 59B72, owned by City Services “Cayman” Ltd

The National Trust for the Cayman Islands (NTCI) is writing to register our recommendations on the development of the above referenced parcels. The land in question is directly adjoining the entrance to the Botanic Park. We support sustainable farming and understand the importance of food security in today’s world, however there are a few very concerning points that we think can easily be corrected. As an adjacent landowner, the National Trust is grateful for the opportunity to register these suggestions that we hope will benefit all parties.

City Services “Cayman” Ltd owns seven parcels that lie side-by-side along Botanic Road up to the entrance to the Botanic Park. Their plan is to clear the four parcels closest to the Park for a farming operation. Unfortunately, three of these parcels are covered in beautiful and ecologically valuable ancient forest. The area in question rises 26 feet above sea level and our research indicates that this forest has remained undisturbed for the past 125,000 years. This ecosystem supports a high degree of biodiversity, from endemic birds and Blue Iguanas, right down to the soil biome with unique bacteria and fungi. Conversely, the parcels further away from the Botanic Park have been previously disturbed and are now covered in invasive plant species. The NTCI suggests that the farm be moved to these parcels away from the Park’s entrance so that the magnificent ancient forest can be preserved. We assume that the developer will find this acceptable as we were impressed with their achievements at Shetty Hospital where buildings were successfully and imaginatively integrated into the natural primary forest.

Additionally, moving the farm further away from the Botanic Park will be of benefit to the farming operation. The ancient forest and flower gardens support numerous pollinators, a natural service of utmost importance to fruit tree businesses. The Park is also an important sanctuary for Cayman Parrots, Blue Iguanas, and the naturalized agouti, or Cayman Rabbit. There is a long history of conflict between these species and local farmers and it can be expected that the farm will lose produce to animals straying from the Park into the farm’s attractive orchards. A 20-ft buffer is unlikely to stop hungry animals while moving the farm 750 ft away from the Park entrance should significantly reduce losses. Additionally, invasive species such as dogs, cats, rats and green iguanas, animals that inevitably accompany development, will also find it more



difficult to invade the Botanic Park and inflict damage on the Park's prized Blue Iguana population.

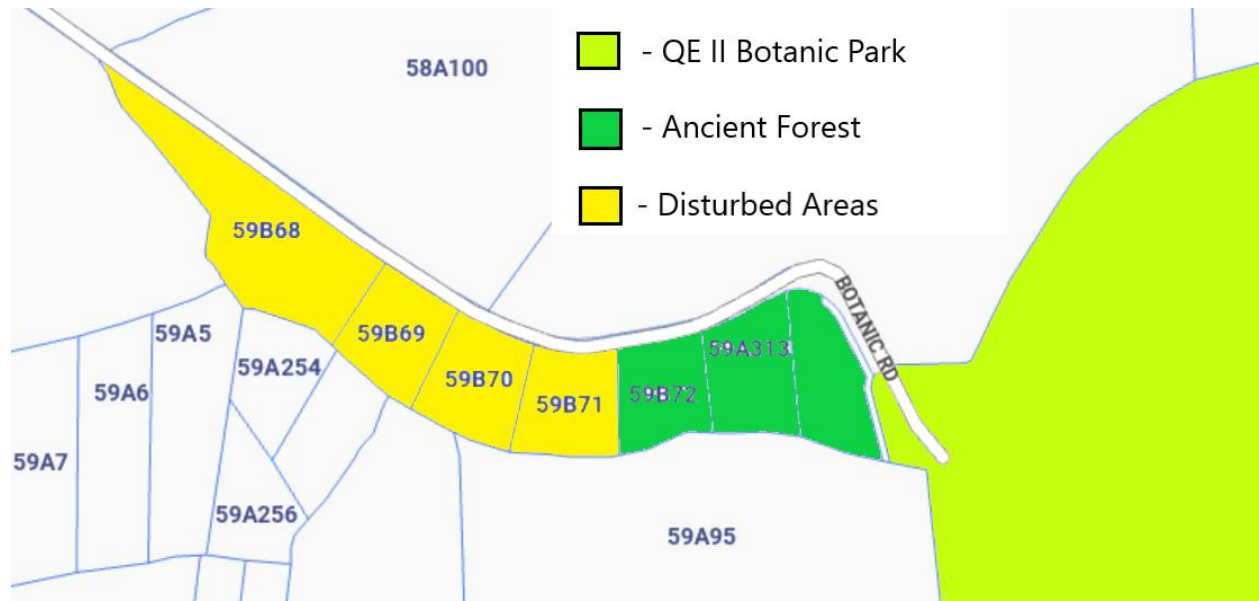
The Queen Elizabeth II Botanic Park is extremely important to our tourism product; it is central to ecotourism and environmental education but also creates economic benefits to North Side by the visitors drawn to visit it. We share ownership of this Park with the Cayman Islands Government and as such we must protect it from threats of damage and any diminution in its value as a national asset for tourism and biodiversity. If the aesthetic appeal of the Park is degraded by development, this important tourism resource will be adversely affected.

The Trust is aware that these lots will be combined to comply with Planning regulations, giving an opportunity to create a single lot around the 'High Value Primary Habitat' adjacent to the Trust's entrance gates, parking area, and our splendid avenue of Royal Palms. Were the applicant minded to grant a 99-year lease to the Trust on this proposed new parcel, we would be very supportive of the idea.

Thank you for your review and we respectfully appeal to the CPA and the Developer to view our recommendations seriously and positively so we all can benefit. Simply moving the farm further from the Park entrance will preserve the aesthetics of the area, conserve our unique natural heritage and honour the memory of Kirkland Nixon, a founder of the Botanic Park and one of Cayman's most remarkable men.

Kind regards,

Annick Jackman
Executive Director



Appendix 'D'

Alban and Cindy Ruiz
P.O. Box 1018
Grand Cayman KY1-1503

Cayman Islands Government
Department of Planning
P.O. Box 113
Grand Cayman, KY1 – 9000

November 10, 2020

To the Director of Planning / Burton Schneider

Re: Easement – Right of way

Block 24E / Parcel 326

Ref: Patrick's Islands Homeowners Association-proposed gates at Poindexter guard house and the junction of Amity drive and Poindexter Rd.

We have been recently informed of an issue that potentially threatens to affect our legal easement.

Our property is 24E 326 (dominant tenement) and was purchased subject to an appurtenance, namely, a vehicular right of way that was obtained with the conveyance in 1990 (a copy of which you will find attached to support this claim).

Parcels 25B, 176/ 29, 24E 2B, 323 REM 1 are the servient tenements.

We have recently (in the last few days) been notified that the *Patrick's Island Homeowners Association*, submitted an application in March 2020, seeking planning permission to erect gates along/ within the servient tenements. If approved, it will negatively change the common practices we have adhered to for roughly the past 30 years.

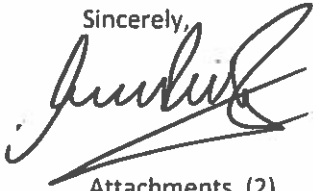
For these reasons we have listed below the following objections:

1. The right of way serves as a benefit which we rely on heavily for easy access to and from the eastern districts. Moreover, in recent years, due to the development and expansion of commerce in neighboring areas we frequently utilize this right of way due to its convenient location. In fact, we made the decision to have our mailbox changed to Savannah location because of our commercial dependence in the area. We travel back and forth through this right of way to check our post office box, to grocery shop, to travel to restaurants and for numerous other reasons.
2. We feel that if we were to sell, a gate would be a negative factor considering that easy access to commercial things will no longer be as easily accessible. That being so, it is reasonable to assume that any owner would consider having this access advantageous.
3. We have an express right of access for the benefit of routing of utilities and emergency services. A gate will most definitely hinder their access.

Having said this it is important to emphasize that the above reasons given amount to, far more than a personal advantage, but is in fact inextricably linked to the benefits we derive from our land and in turn stand to lose, as public access was made available later and runs one way in the opposite direction, away from most locations we frequent most.

Therefore, we stand opposed to a grant by Planning Department for the gates proposed by the *Patrick's Island Homeowners Association*.

Sincerely,

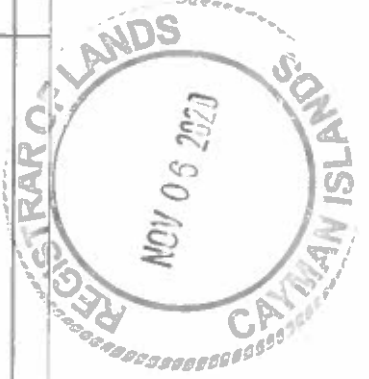
A handwritten signature in black ink, appearing to be "J. Smith", written in a cursive style.A second handwritten signature in black ink, written in a cursive style, positioned to the right of the first signature.

Attachments. (2)

C - INCUMBRANCES SECTION

25B 29REM1

ENTRY No.	DATE	INSTRUMENT No.	NATURE OF INCUMBRANCE	FURTHER PARTICULARS	SIGNATURE OF REGISTRAR
3	13/10/89	5495/89	Easement	A 30 ft. vehicular Right of Way in favour of 24E 324-327 & 323 REM 1 & 25B 494-498 & for the purpose of routing of utilities and services & subsequent subdivisions as indicated on the Registry Map.	J WITTER
4	23/09/91	5539/91	Easement	A 30 ft. wide vehicular Right of Way in favour of 24B 131-137, 24C 12-55, 24E 28, 89, 380-388, 25B 494-498 and any subsequent subdivisions thereof as indicated on the Registry Map.	J WITTER
5	15/10/98	9122/98	Easement	A 30-ft. vehicular Right of Way in favour of 24E 99 as indicated on the Registry Map.	ALINE WOOD
6	15/10/98	9123/98	Easement	A 30-ft. vehicular Right of Way in favour of 24E 456 as indicated on the Registry Map.	ALINE WOOD
7	08/07/99	6164/99	Easement	A vehicular Right of Way over the entire parcel in favour of 24D 61-63 & 59REM1 as indicated on the Registry Map.	A Kircliman
8	09/05/01	1692/01	Easement	A 30-ft. V.R.O.W. over this parcel in favour of 24E 91 and all subsequent subdivisions for access and egress and the routing of utilities and services as indicated on the Registry Map.	ALINE WOOD



CERTIFIED TRUE COPY

M. Jervis
 Chief Registrar of Lands

C - INCUMBRANCES SECTION

24E 326

ENTRY No.	DATE	INSTRUMENT No.	NATURE OF INCUMBRANCE	FURTHER PARTICULARS	SIGNATURE OF REGISTRAR
8	11/10/02	6337/02	Charge	Principal Sum: C\$25,000.00. Interest Rate and Repayment date unspecified. Note: Chargee has the right to tack & consolidate (RLL) Secs. 81 & 82) M1	M JERVIS
9	11/10/02	6337/02	Proprietors	Proprietors: THE ROYAL BANK OF CANADA, P.O. Box 245, George Town, Grand Cayman	M JERVIS
10	02/05/05	15597/05	2nd Charge	Principal Sum: C\$15,000.00. Interest Rate and Repayment date unspecified. Note: Chargee has the right to tack & consolidate (RLL) Secs. 81 & 82) BM	B Myers
11	02/05/05	15597/05	Proprietors	Proprietors: THE ROYAL BANK OF CANADA, P.O. Box 245, George Town, Grand Cayman	B Myers



PATRICK'S ISLAND HOMEOWNERS ASSOCIATION

PO Box 2681
Grand Cayman, KY1-1111
Cayman Islands

Owner/Resident of Parcel 24E 326

October 28, 2020

To whom it may concern,

The Patrick's Island Homeowners Association is writing to you as your property was granted a vehicular Right of Way over Poindexter Road between the Patrick's Island guard gate (Poindexter entrance) and the top of Amity Drive some time ago. In March 2020, the HOA filed an application to put security gates on the Poindexter guard house as well as at the junction of Amity Drive and Poindexter Road.

Given the Right of Way afforded to your property, we are writing to confirm the following:

1. The existing Right of Way to your property will be honored via gate access.
2. The access provided to the residents of your property will be consistent with that provided to residents within the Patrick's Island development (a vehicle windshield sticker, a remote push button, or other as ultimately determined).
3. The cost of this access, if any, will be borne by the Patrick's Island HOA.

Should you have any questions, please do not hesitate to get in touch with

Kind regards.



Jennifer Frizzelle

(345) 516 4326

patricksislandhoa@gmail.com

On behalf of The Patrick's Island Homeowners Association

Received by _____ (print name) on _____ (date)

Signed

John and Caitlin Dunne
P.O. Box 781
Grand Cayman, KY1-9006

Cayman Islands Government
Department of Planning
P.O. Box 113
Grand Cayman, KY1-9000

November 10th, 2020

To the Director of Planning/ Burton Schneider

Re: Easement -Right of way

Block 24E/Parcel 325

Ref: Patrick's Island Homeowners Association-proposed gates at Poindexter guard house and the junction of Amity drive and Poindexter Rd.

We have been recently informed of a proposed project that potentially threatens to affect our legal easement.

Our property is 24E 325 (dominant tenement) and was purchased with a vehicular right of way that was obtained with the conveyance in 1990.

As of October 28th 2020 we were informed that the Patrick's Island Homeowners Association submitted an application, in March of 2020, seeking planning permissions to erect gates along/within the servient tenements. If approved we are concerned it will negatively impact the neighborhood we eagerly purchased into in December of last year.

Our reasons for believing so are listed below:

1. We purchased our property with the express right of access through this easement, and while we have been told, on October 28th, that we would be given access to the easement through either a vehicle windshield sticker or a remote push button, we are concerned that as we are not officially a part of the *Patrick's Island Homeowners Association* we may not be privy to updates with regards to the gates themselves (ie: gate repairs, updates to systems, changes to codes or access systems) causing us to lose a vital access point for undetermined periods of time. The fact that our post box is accurately registered with lands & survey but we were not mailed a notification, and were only made aware of the gates through a foot survey on October

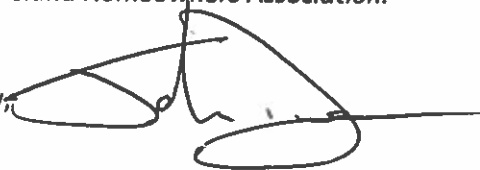
28th 2020 (months after the proposal was submitted to planning), should highlight our reason for a lack of confidence in the intent for inclusion/communication.

2. It has been made clear to us by the Association that the gates are being installed by the Association and therefore "free of charge" to us. We are concerned that this arrangement will be held against us in the future; should we need to bring up issues with the board or if/when we decide to sell our home. The fact that the Association is treating this as if they are doing us a favor of some kind, rather than respecting that the easement does not solely belong to them is an issue for us.
3. We have never been shown drawings of the intended gates. We are concerned that because of the width of the current road pedestrians will not be considered. Our young children have friends who live in the neighborhood of Coconut Village and we would like to be made certain that they could safely walk to their friend's homes without having to cross through a gate intended for vehicles.
4. Though we have no legal right to access Amity Drive, we are concerned that a private gate there will lower the value of our home. This is a nice, safe road with our homes having been built and well maintained for 30+ years; to place a gate at Amity signifies something to be closed off from. We personally purchased our home because of the well-established, friendly & peaceful road it was on. If the Association is applying to install a gate here to increase their property values, we ask the board to consider the impact that may have on the surrounding properties which have been here as long, or longer than many of the homes in Patrick's Island itself.

While we understand that the *Patrick's Island Homeowners Association* may very well have good intentions for these gates, it comes across to us as the first steps in an effort to close out the few homes built on Poindexter that are not included in the Patrick's Island Strata. This roadway is a useful access point to the East West Arterial & the commercial area it leads to, we are hesitant to agree to a gate without the above concerns being addressed.

Therefore, we stand opposed to a grant by the Planning Department for the gates proposed by the *Patrick's Island Homeowners Association*.

Sincerely,

A handwritten signature in black ink, appearing to read "John Dunne", with a long horizontal line extending to the right.

John Dunne

Alban and Cindy Ruiz
P.O. Box 1018
Grand Cayman KY1-1503

Cayman Islands Government
Department of Planning
P.O. Box 113
Grand Cayman, KY1 – 9000

November 10, 2020

To the Director of Planning / Burton Schneider

Re: Easement – Right of way

Block 24E / Parcel 326

Ref: Patrick's Islands Homeowners Association-proposed gates at Poindexter guard house and the junction of Amity drive and Poindexter Rd.

We have been recently informed of an issue that potentially threatens to affect our legal easement.

Our property is 24E 326 (dominant tenement) and was purchased subject to an appurtenance, namely, a vehicular right of way that was obtained with the conveyance in 1990 (a copy of which you will find attached to support this claim).

Parcels 25B, 176/ 29, 24E 2B, 323 REM 1 are the servient tenements.

We have recently (in the last few days) been notified that the *Patrick's Island Homeowners Association*, submitted an application in March 2020, seeking planning permission to erect gates along/ within the servient tenements. If approved, it will negatively change the common practices we have adhered to for roughly the past 30 years.

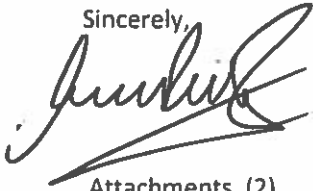
For these reasons we have listed below the following objections:

1. The right of way serves as a benefit which we rely on heavily for easy access to and from the eastern districts. Moreover, in recent years, due to the development and expansion of commerce in neighboring areas we frequently utilize this right of way due to its convenient location. In fact, we made the decision to have our mailbox changed to Savannah location because of our commercial dependence in the area. We travel back and forth through this right of way to check our post office box, to grocery shop, to travel to restaurants and for numerous other reasons.
2. We feel that if we were to sell, a gate would be a negative factor considering that easy access to commercial things will no longer be as easily accessible. That being so, it is reasonable to assume that any owner would consider having this access advantageous.
3. We have an express right of access for the benefit of routing of utilities and emergency services. A gate will most definitely hinder their access.

Having said this it is important to emphasize that the above reasons given amount to, far more than a personal advantage, but is in fact inextricably linked to the benefits we derive from our land and in turn stand to lose, as public access was made available later and runs one way in the opposite direction, away from most locations we frequent most.

Therefore, we stand opposed to a grant by Planning Department for the gates proposed by the *Patrick's Island Homeowners Association*.

Sincerely,

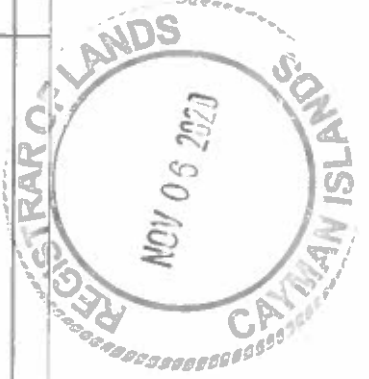
A handwritten signature in black ink, appearing to be "J. Smith", written in a cursive style.A second handwritten signature in black ink, also in a cursive style, appearing to be "J. Smith".

Attachments. (2)

C - INCUMBRANCES SECTION

25B 29REM1

ENTRY No.	DATE	INSTRUMENT No.	NATURE OF INCUMBRANCE	FURTHER PARTICULARS	SIGNATURE OF REGISTRAR
3	13/10/89	5495/89	Easement	A 30 ft. vehicular Right of Way in favour of 24E 324-327 & 323 REM 1 & 25B 494-498 & for the purpose of routing of utilities and services & subsequent subdivisions as indicated on the Registry Map.	J WITTER
4	23/09/91	5539/91	Easement	A 30 ft. wide vehicular Right of Way in favour of 24B 131-137, 24C 12-55, 24E 28, 89, 380-388, 25B 494-498 and any subsequent subdivisions thereof as indicated on the Registry Map.	J WITTER
5	15/10/98	9122/98	Easement	A 30-ft. vehicular Right of Way in favour of 24E 99 as indicated on the Registry Map.	ALINE WOOD
6	15/10/98	9123/98	Easement	A 30-ft. vehicular Right of Way in favour of 24E 456 as indicated on the Registry Map.	ALINE WOOD
7	08/07/99	6164/99	Easement	A vehicular Right of Way over the entire parcel in favour of 24D 61-63 & 59REM1 as indicated on the Registry Map.	A Kircliman
8	09/05/01	1692/01	Easement	A 30-ft. V.R.O.W. over this parcel in favour of 24E 91 and all subsequent subdivisions for access and egress and the routing of utilities and services as indicated on the Registry Map.	ALINE WOOD



PATRICK'S ISLAND HOMEOWNERS ASSOCIATION

PO Box 2681
Grand Cayman, KY1-1111
Cayman Islands

Owner/Resident of Parcel 24E 326

October 28, 2020

To whom it may concern,

The Patrick's Island Homeowners Association is writing to you as your property was granted a vehicular Right of Way over Poindexter Road between the Patrick's Island guard gate (Poindexter entrance) and the top of Amity Drive some time ago. In March 2020, the HOA filed an application to put security gates on the Poindexter guard house as well as at the junction of Amity Drive and Poindexter Road.

Given the Right of Way afforded to your property, we are writing to confirm the following:

1. The existing Right of Way to your property will be honored via gate access.
2. The access provided to the residents of your property will be consistent with that provided to residents within the Patrick's Island development (a vehicle windshield sticker, a remote push button, or other as ultimately determined).
3. The cost of this access, if any, will be borne by the Patrick's Island HOA.

Should you have any questions, please do not hesitate to get in touch with

Kind regards.



Jennifer Frizzelle

(345) 516 4326

patricksislandhoa@gmail.com

On behalf of The Patrick's Island Homeowners Association

Received by _____ (print name) on _____ (date)

Signed

John and Caitlin Dunne
P.O. Box 781
Grand Cayman, KY1-9006

Cayman Islands Government
Department of Planning
P.O. Box 113
Grand Cayman, KY1-9000

November 10th, 2020

To the Director of Planning/ Burton Schneider

Re: Easement -Right of way

Block 24E/Parcel 325

Ref: Patrick's Island Homeowners Association-proposed gates at Poindexter guard house and the junction of Amity drive and Poindexter Rd.

We have been recently informed of a proposed project that potentially threatens to affect our legal easement.

Our property is 24E 325 (dominant tenement) and was purchased with a vehicular right of way that was obtained with the conveyance in 1990.

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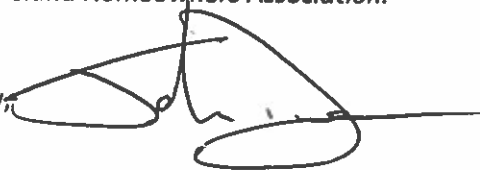
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Sincerely,

A handwritten signature in black ink, appearing to read "John Dunne", with a long horizontal line extending to the right.

John Dunne

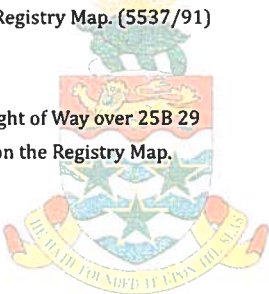
Appendix 'E'



CAYMAN ISLANDS LAND REGISTER

Edition 9
Opened 17 MAR 2020

A - PROPERTY SECTION

Ownership Type	Crown / Private	APPURTENANCES	Block and Parcel No. 24E 473	
Nature of Title	Absolute / Provisional	 <p>A 30-ft. vehicular Right of Way over 25B 176 as indicated on the Registry Map. (5537/91) CG</p> <p>A 30-ft. vehicular Right of Way over 25B 29 REM1 as indicated on the Registry Map. (5539/91) CG</p>	Registration Section	SPOTTS
Origin of Title			Name of Parcel	
First Registration			Approximate Area	2.791 Acre (See Survey Plan FR 50/304)
Mutation No.	M 5258			

B - PROPRIETORSHIP SECTION

Entry No.	Date	Instrument No.	Name and Address of Proprietor(s)	Signature of Registrar
			Restriction: No dispositions until Certificate of Occupancy from Planning. AK	
3	13/02/20	1675/20	THE PATRICK'S ISLAND HOME OWNERS ASSOCIATION, P. O. Box 2681, Grand Cayman KY1-1111, Cayman Islands.	A Kirchman

Block and Parcel No. 24E 473

Edition 9



C - INCUMBRANCES SECTION


Entry No.	Date	Instrument No.	Nature of Incumbrance	Further Particulars	Signature of Registrar
3	13/10/89	5495/89	Easement	A 30-ft. vehicular Right of Way in favour of 24E 323 REM1, 324-327 and for the purpose of routing of utilities and services & subsequent subdivisions as indicated on the Registry Map.	C. GEALEY
4	16/08/93	4226/93	Easement	A 30-ft. wide vehicular Right of Way over the estate road as indicated on the Registry Map.	C. GEALEY
5	17/02/93	7011/93	Easement	A 30-ft. vehicular Right of Way in favour of 24E 323 REM1 as indicated on the Registry Map and all subsequent subdivisions.	C. GEALEY
6	15/10/98	9120/98	Easement	A 30-ft. vehicular Right of Way in favour of 24E 99 as indicated on the Registry Map.	ALINE WOOD
7	15/10/98	9121/98	Easement	A 30-ft. vehicular Right of Way in favour of 24E 456 as indicated on the Registry Map.	ALINE WOOD
8	08/07/99	6165/99	Easement	A vehicular Right of Way over the entire parcel in favour of 24D 61-63 & 59 REM1 as indicated on the Registry Map.	A Kirchman
9	09/05/01	1691/01	Easement	A 30-ft. V.R.O.W. over this parcel in favour of 24E 91 and all subsequent subdivisions for access and egress and the routing of utilities and services as indicated on the Registry Map.	ALINE WOOD



CAYMAN ISLANDS LAND REGISTER

Edition 11
Opened 17 MAR 2020

A - PROPERTY SECTION

Ownership Type	Crown / Private	APPURTENANCES	Block and Parcel No. 25B 29REM1	
Nature of Title	Absolute / Provisional	A 30 ft. wide vehicular Right of Way over 25B 176 as indicated on the Registry Map. (5537/91) JW 	Registration Section	SPOTTS
Origin of Title			Name of Parcel	
First Registration			Approximate Area	1.1967 Acre (M 6415) AW [See Survey Plan F/R 50/432]
Mutation No.	M 4876			

B - PROPRIETORSHIP SECTION

Entry No.	Date	Instrument No.	Name and Address of Proprietor(s)	Signature of Registrar
4	13/02/20	1676/20	THE PATRICK'S ISLAND HOME OWNERS ASSOCIATION, P. O. Box 2681, Grand Cayman KY1-1111, Cayman Islands.	A Kirchman



C - INCUMBRANCES SECTION

Entry No.	Date	Instrument No.	Nature of Incumbrance	Further Particulars	Signature of Registrar
3	13/10/89	5495/89	Easement	A 30 ft. vehicular Right of Way in favour of 24E 324-327 & 323 REM 1 & 25B 494-498 & for the purpose of routing of utilities and services & subsequent subdivisions as indicated on the Registry Map.	J WITTER
4	23/09/91	5539/91	Easement	A 30 ft. wide vehicular Right of Way in favour of 24B 131-137, 24C 12-55, 24E 28, 89, 90, 380-388, 25B 494-498 and any subsequent subdivisions thereof as indicated on the Registry Map.	J WITTER
5	15/10/98	9122/98	Easement	A 30-ft. vehicular Right of Way in favour of 24E 99 as indicated on the Registry Map.	ALINE WOOD
6	15/10/98	9123/98	Easement	A 30-ft. vehicular Right of Way in favour of 24E 456 as indicated on the Registry Map.	ALINE WOOD
7	08/07/99	6164/99	Easement	A vehicular Right of Way over the entire parcel in favour of 24D 61-63 & 59REM1 as indicated on the Registry Map.	J. Kirchman
8	09/05/01	1692/01	Easement	A 30-ft. V.R.O.W. over this parcel in favour of 24E 91 and all subsequent subdivisions for access and egress and the routing of utilities and services as indicated on the Registry Map.	ALINE WOOD




CAYMAN ISLANDS LAND REGISTER

Edition 7

Opened 17 FEB 2020

A - PROPERTY SECTION

Ownership Type	Crown / Private	APPURTENANCES	Block and Parcel No. 24E 325	
Nature of Title	Absolute / Provisional	A 30-ft. VROW over 25B 176,29,24E 28, 323 REM 1 & the benefit of routing of utilities & services as indicated on the Registry Map. (5495/89) JW	Registration Section	SPOTTS
Origin of Title			Name of Parcel	
First Registration				
Mutation No.	M 4368			
			Approximate Area 0.2865 Acre (See Survey Plan F/R (01/891))	

B - PROPRIETORSHIP SECTION

Entry No.	Date	Instrument No.	Name and Address of Proprietor(s)	Signature of Registrar
7	03/02/20	1274/20	CAITLIN ELIZABETH DUNNE, JOHN VINCENT DUNNE, 10 Market Street #781, Grand Cayman KY1-9006, Cayman Islands, as joint proprietors. Note: Not to transfer without consent of Chargee (RLL Sec. 68) SW	S Williams



CAYMAN ISLANDS LAND REGISTER

Edition 10
Opened 24 AUG 2010

A - PROPERTY SECTION

Ownership Type	Crown / Private	APPURTENANCES	Block and Parcel No. 24E 326	
Nature of Title	Absolute / Provisional	A 30-ft. VROW over 25B 176,29,24E 28, 323 REM 1 & the benefit of routing of utilities & services as indicated on the Registry Map. (5495/89) JW 	Registration Section	SPOTTS
Origin of Title			Name of Parcel	
First Registration			Approximate Area	0.5739 Acre (See Survey Plan F/R (01/891))
Mutation No.	M 4368			

B - PROPRIETORSHIP SECTION

Entry No.	Date	Instrument No.	Name and Address of Proprietor(s)	Signature of Registrar
5	04/04/97	2599/97	CINDY RUIZ, P.O. Box 572, George Town, Grand Cayman.	M.JERVIS
			Note: Not to transfer without consent of Chargee (RLL Sec. 68) AS	

Appendix 'F'

Nov 23, 2020

Alban and Cindy Ruiz
P.O. Box 1018
Grand Cayman KY1-1503

Cayman Islands Government
Department of Planning
P.O. Box 113
Grand Cayman, KY1 – 9000

To the Director of Planning / Burton Schneider
Re: Easement – Right of way
Block 24E / Parcel 326

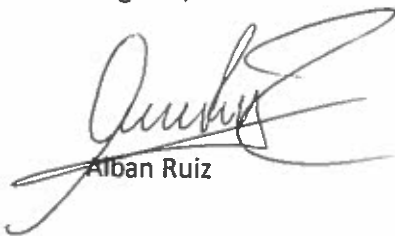
Ref: Patrick's Islands Homeowners Association-proposed gates at Poindexter guard house and the junction of Amity drive and Poindexter Rd.

Further to our letter dated Nov 10, 2020 I learnt today Nov 23, 2020, 10 months after the original application was filed (Mar 2020) that there is an 80-foot notification radius (buffer area) established for this proposed project?

There are 4 properties (Block 24E- parcels 324-325-326-327) that extend over 400 feet that are DIRECTLY affected by this legal right of way established in 1989 and purchased, in our case in 1990 that fall outside the 80 feet radius and there was no intention of notifying us of such major project?

I am not able to comprehend how anyone knowing that we have a legal right away that would be DIRECTLY affected by this proposal could have thought that we do not need to be informed!!

Regards;



Alban Ruiz

Appendix 'G'



CCS Ltd

CONSTRUCTION CONTRACT
SERVICES LTD

October 13,2020

The Chairman,
Central Planning Authority,
Government Administration Building,
George Town,
Cayman Islands,

Dear Sir,

Variation Request
Grand Cayman - Block 14E, Parcel 9
“Chatterbox” Change of Use Planning Application

On behalf of my client, “Chatterbox” I write to request a variation from Section 6 (3) of the current Development and Planning Regulations which requires a mean high water mark survey to any parcel next to the sea.

The application is for a change of use as a Lessee only of the existing Don Foster building without any exterior alterations and with the existing dive operation continuing in a reduced format.

The shoreline is existing Ironshore and will remain unaltered. Any requirement for a shoreline survey would be an unnecessary expense to my client.

Yours sincerely,

Robert Allan, B.Arch. (Hons), RIBA, IMAIA.
Construction Contract Services, Ltd.

PO BOX # 12065
Registered Office
4th Floor Cardinall Plaza,
30 Cardinall Avenue.
George Town,
Grand Cayman,
Cayman Islands, KY1-1010

Phone: (345)-326-1714
E-Mail: csl@candw.ky

Appendix 'H'



MINISTRY OF
EDUCATION, YOUTH, SPORTS
AGRICULTURE & LANDS
CAYMAN ISLANDS GOVERNMENT

Government Administration Building Box 108
133 Elgin Avenue Grand Cayman KY1-9000
CAYMAN ISLANDS
t. (345) 244 2417 f. (345) 949 9343
www.education.gov.ky

November 3, 2020

Department of Planning
P.O. Box 113
Grand Cayman KY1-9000
CAYMAN ISLANDS

Dear Sir/Madam,

Re: Chatterbox

The Chatterbox Playschool has helped to fill a gap in early childhood provision over the last few years. There are some young children who require specialist support and intervention in order to be successful in a social and educational setting. Chatterbox Playschool has been able to offer provision which supports some children where other educational institutions could not.

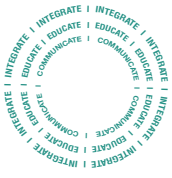
I understand Chatterbox is hoping to expand their offerings by applying to register as an early childhood care and education centre. This would allow them to offer longer hours per day and build on their offerings, which should ultimately prove to benefit the children they serve, and the community as a whole, as there is currently no early childhood care and education centre which has the specialist staff and level of support which Chatterbox provides in their Playschool.

Should you have any questions or which to speak on this further, please do not hesitate to contact me via email on carol.bennett@gov.ky or via phone at 244-5734.

Kind regards,

A handwritten signature in black ink that reads "Carol Bennett".

Carol Bennett
Senior Policy Advisor and Manager
Early Childhood Care and Education Unit



CHATTERBOX

CONNECTING THERAPY AND EDUCATION

INTEGRATE | EDUCATE | COMMUNICATE

CHATTERBOX - ASSESSMENT OF COMMUNITY NEEDS

OVERVIEW

Chatterbox is an established dually licensed educational and healthcare facility and has been operating since October 2010. We currently employ a multidisciplinary team of ten educators and therapists and are continually expanding our services to help our community. We offer programmes for both children and adults.

We are the only multidisciplinary therapy team with an attached Playschool (currently operating part-time, as we do not have outside space available). There is a community need for inclusive facilities which can support children and adults of all ages with neurodiverse needs.

Please see attached letter from the Ministry of Education in support of the services we provide for the community and also explaining the need for these facilities to be expanded into a full day programme, which requires designated outdoor space,

Mission Statement

We have a clear aim at Chatterbox, to help make a difference to both children and adult's lives by connecting therapy and educational services.

We provide commitment and a caring attitude, professional excellence and open communication to facilitate a partnership of trust with families, which helps them to reach their goals.

We understand that an integrated, inclusive and balanced approach is essential and we are committed to finding the right solutions for every family who we work with.

We are here to help.

We currently offer speech and language therapy, occupational therapy, physiotherapy and massage therapy. Our therapy services are available for both children and adults.

We also offer an inclusive Playschool for children aged 2-5. In our Playschool, we work on language development, motor development, social skills, feeding, toileting and general school readiness skills. We incorporate arts & crafts, music, movement and lots of fun activities to help children to learn. We are in constant contact with parents and involve them in setting goals, monitoring process and sharing daily successes.

We offer additional groups, which include Tummy Time! for babies aged 0-12 months, Play Time for toddlers aged 6-18 months and Movers & Shakers for children aged 2-5 years. Baby Massage Workshops are also offered. We love babies!

We are constantly innovating and looking for new services we can offer, which will benefit people from all sectors of our society, but have always been limited by not having accessible outdoor space.

VISION

Our vision is, and always has been, to expand our Playschool into a small, fully registered Early Childhood Care and Education Centre (ECCE) and for that we need outdoor space, attached to our Centre, for children to be able to explore the outside world.

Suitable outdoor space is difficult to find in Cayman and our team believes that we have found somewhere incredibly special at Don Foster's (Casuarina Point) where we can create a holistic educational and healthcare community centre, where both children and adults can receive services, take part in workshops and also give back to our community by learning more about our natural environment and appreciating our Island's natural beauty.

The downstairs area at Don Fosters Dive Centre is ideally suited to become a small ECCE and the outdoor space, when safely fenced and secured, will provide a natural play area where children can learn about their environment through exploration and play. Natural materials will be utilised to create an outdoor play space where children can learn and thrive and it will be in harmony with the oceanside environment. Indigenous vegetation will be utilised to provide a natural screen around the outdoor space where children (and adults) will be able to learn about how trees and plants grow, by watching it happen in real time. There will be spaces and opportunities for growing a variety of plants and as a lifelong nature lover, I believe that one of the most important things children can learn, is about their natural habitat. If we want to protect our oceans and planet, children need to be educated about how things grow and interact with each other and what human's effect on this can be (both positive and negative).

There will also be space to provide an alternative education centre for older students, who are not able to learn and function in more traditional school settings. Many children are finding that large, traditional schools are not ideal for their learning needs and are seeking smaller settings, where their personal learning styles can be fostered. This was even more apparent during the lockdown period, when some students thrived at home, when they were able to learn at their own pace and recently several small schools have been approved for this purpose throughout Cayman.

The downstairs area will also house our physiotherapy, occupational therapy and play therapy departments and the upstairs rooms will house speech and language therapy and massage therapy. We would also like to add counselling and psychological services. The pandemic has seen a rise in mental health problems in both children and adults and we would like to be able to provide services to help with these issues in a calm and healing environment.

The pool will be utilised for aquatic therapy and swimming lessons for children and adults. There will also be opportunities for children and adults to learn to dive.

Our vision is to provide a vibrant community space, which in addition to our existing core services, will allow other groups to utilise our space and flourish. Yoga, arts, dance, exercise and other community groups will be welcomed into our space to practice and collaborate in this beautiful, central location. Our vision is to blend in with our surroundings and use the backdrop of ocean, sand and vegetation to foster an environment of healing, learning and growth.

I have also recently registered a non-profit organisation called TOGETHER:

The purpose of this organisation is to provide supports, accommodations and inclusion for neurodiverse individuals in our community.

Neurodiversity is the idea that neurological differences are the result of normal, natural variations in the human genome. They do not need to be cured, but instead need help and accommodations. Communities and organisations where leaders make such accommodations reap tremendous benefits.

The extra space at Don Foster's will create a safe and welcoming area for individuals, who may have conditions which create barriers to be able to do this easily, such as mental health issues, special needs, medical conditions etc. etc., to meet and gain work experience and receive appropriate training courses to help them find employment and provide community involvement.

Chatterbox currently provides work experience for two young adults, helping them learn functional communication skills within an office environment and we hope to be able to employ at least one of these in the future. With increased space and expanded programmes, we could potentially provide more placements for a wider range of young adults seeking work experience and training.

We also provide shadowing opportunities for young people wanting to begin their journey to train as therapists and early childhood educators and clinical education hours for returning students during holiday periods, who are already enrolled on therapy or educational degree courses overseas.

BARRIERS TO BECOMING A CENTRE OF EXCELLENCE IN PREVIOUS LOCATIONS

Regular commercial office space is not ideal for providing educational and therapy services, as it is recognised that outdoor space is vital for health and wellbeing. Even a view of natural environments from treatment rooms and classrooms, has been shown to be beneficial

Natural environments provide many opportunities for learning. Engaging in nature-based activities can help people to learn about nature and develop ecological knowledge; whilst also developing social and physical skills (NEA, 2011). For example, joining an allotment project would help participants to learn about food growing and planting, whilst joining a green exercise group could help participants to interact with others (Wood et al., 2013). This learning is not always the aim of the activity, but can provide a number of benefits for wellbeing such as increased self-esteem and resilience, a sense of purpose and hope, a feeling of competency and can often act as a distractor from stressful life events, fostering coping skills (Feinstein and Hammond, 2004; Hammond, 2004; Wood et al., 2013).

In addition, the natural environment can also be used as a learning tool. In schools with environmentally focused curriculums attainment is 72% greater, with outdoor learning experiences allowing children to develop cognitive skills more effectively than classroom based learning (Dillon et al., 2006). Learning in nature also benefits social skills, improves self-esteem and enhances social, personal and emotional development (Kings College, 2011). It can also impact upon long term memory, increase knowledge and understanding, educational attainment, behaviour and attitude to others. The natural environment adds value to everyday experiences in the classroom, allows children to achieve more and develop more effectively, thus promoting greater wellbeing (Kings College, 2011).

Many forest schools and beach schools are springing up all over the world, as science supports outdoor learning as such a vital learning resource. Many children do not get a chance to spend time outdoors at all and instead sit in front of screens for most of their leisure time. TV, tablets and phones have replaced outdoor play and this is impacting children's ability to learn functional communication skills at all ages.

In our current location, the only views out of our windows are cars and a parking lot. There is no outside space for staff or clients to spend time. We have only 5 allocated parking spaces, which causes frustration for our team and our clients. Most of the vegetation has been removed from Downtown George Town and it is difficult to spend any time at all outdoors, as the concrete retains heat.

The large parking lot at Don Foster's will allow parents to drop off their children at our Early Childhood Centre safely and also clients attending individual therapy sessions will have safe, accessible, onsite parking.

Table 1: Evidence for the health and wellbeing benefits of contact with nature

Benefit	Key Studies (By author)
■ Reduction in anxiety and stress	Parsons, 1991; Ulrich et al., 1991; Lohr et al., 1996; Rubinstein, 1997; Parsons et al., 1998; Gullone, 2000; Hartig et al., 2003; Laumann et al., 2003; Grahn and Stigsdotter, 2003; Fredrickson and Branigan, 2005; Plante et al., 2006; Maas et al., 2006; Van den Berg et al., 2007; Velarde, Fry and Veit, 2007, 2010; Ward-Thomson et al., 2012; White et al., 2013; Roe et al., 2013b.
■ Improvement of mood	Hartig et al., 1991; Ulrich et al., 1991; Hartig et al., 1996; Rubinstein, 1997; Hartig et al., 2003; Van den Berg et al., 2003; Pretty et al., 2005, 2006, 2007; Barton and Pretty, 2010; Barton et al., 2009, 2011; Roe and Aspinall, 2011a.
■ Improvement of self-esteem	Pretty et al., 2005, 2006, 2007; Barton and Pretty, 2010; Barton et al., 2009, 2011
■ Improvement of psychological wellbeing	Browne, 1992; Kaplan and Kaplan, 1989; Hartig et al., 1991; Kaplan, 1992, 1995; Chalfont, 2006; Joye, 2007; Nisbet and Zelenski, 2011; White et al., 2013; Wolsko and Lindberg, 2013
■ Improvement in attention and concentration	Hartig et al., 1991; Tennessen and Cimprich, 1995; Lohr et al., 1996; Wells, 2000; Kuo, 2011; Taylor et al., 2001, 2002; Hartig et al., 2003; Laumann et al., 2003; Van den Berg et al., 2003; Ottosson and Grahn, 2005; Aspinall et al., 2013; Wolsko and Lindberg, 2013
■ Reduction in symptoms of ADHD in children	Roe and Aspinall, 2011b
■ Increase in cognitive restoration	Faber Taylor et al., 2002; Kuo, 2001; Aspinall et al., 2013
■ Improvements to physical health	Humpel et al., 2002; Maas et al., 2008; Park et al., 2007, 2010; Coombes et al., 2010; Lee et al., 2010; Gladwell et al., 2013
■ Promotion of physical activity	Bowler et al., 2010; Thompson Coon et al., 2011; Wood et al., 2012; Gladwell et al., 2013; Wood et al., 2014
■ Reduction of crime rates	Kuo et al., 1998a; Kuo and Sullivan, 2001a,b
■ Increased immunity	Rohde and Kendle, 1994; Parsons et al., 1998; Li et al., 2007; Park et al., 2010; Lee et al., 2011
■ Improved perceptions of general health	De Vries et al., 2003; Mass et al., 2006
■ Increased social contact	Coley et al., 1997; Kuo et al., 1998b; Kweon et al., 1998; Ward Thompson, 2002; Heinrichs et al., 2003; Kim and Kaplan, 2004; Sullivan et al., 2004; Maas et al., 2009; Park et al., 2007, 2010; de Vries, 2010; Pretty et al., 2011.

Source: Adapted from Barton, 2008 and Bragg, 2014.

EXTRA FACILITIES WHICH CAN BE PROVIDED IN THIS LOCATION

At Chatterbox, we are always keen to give back to our community and take part in as many community projects as possible. Having outdoor space, as well as allowing us to provide full day educational programmes, would also allow us to offer more community based fun activities, such as Easter egg hunts, a space for Father Christmas to visit and have a Christmas party, outdoor games days and pool games.

The new non-profit organisation TOGETHER: will allow many of these activities to be offered at no additional cost, which is something I have been working towards for many years, so that our whole community can take advantage of this unique space.

Our team recently undertook dementia awareness training and learned that there are few facilities on Island, which provide services for this group of people, so this is an area we could look into what is needed to be able to help. We would also love to provide adult literacy classes.

Our aim is to become a vibrant and integral part of our George Town and South Sound community, which should complement the George Town revitalisation project. We have no plans to substantially change this iconic property and its rich, Caymanian heritage, but rather wish to enhance the property and allow a more diverse group of people to be enjoy its unique location and relaxed ambience.

Please find attached;

A letter from Carol Bennett, Senior Policy Advisor and Manager from the Ministry Of Education Early Childhood Care and Education Support Unit, in support of our application to become an Early Childhood Care and Education Centre

A literature review regarding natural environments and the effects on wellbeing and learning.

A link to an article outlining the benefits of providing access to nature to promote patient healing and relief from stress in healthcare facilities.

<https://shar.es/abLljj>

CONNECTING THERAPY AND EDUCATION



University of Essex



A literature review for The Wildlife Trusts:
By the University of Essex

Wellbeing benefits from natural environments rich in wildlife



Protecting **Wildlife** for the Future



University of Essex

Dr Rachel Bragg, Dr Carly Wood
Dr Jo Barton and Professor Jules Pretty

School of Biological Sciences, University of Essex

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The authors are very grateful for the help and support given by The Wildlife Trusts staff, notably Nigel Doar, Cally Keetley and William George. All photos are courtesy of various Wildlife Trusts and are credited accordingly. Cover Photo credits: *Osprey* © *Derek Moore*. *Small Copper Butterfly* © *Bob Coyle*. *Woman holding moths* © *Tom Marshall*.

Wellbeing benefits from natural environments rich in wildlife:

A literature review for The Wildlife Trusts

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List of Abbreviations

AAI	Animal Assisted Interventions
ASD	Autistic Spectrum Disorder
CBD	Convention on Biological Diversity
CCG	Clinical Commissioning Group
Defra	Department for Farming and Rural Affairs
DoH	Department of Health
HT	Horticultural Therapy
HWB	Health and Wellbeing Board
LNP	Local Nature Partnership
MENE	Monitor of Engagement with the Natural Environment
NEA	National Ecosystem Assessment
Nef	New Economics Foundation
NHS	National Health Service
NICE	National Institute for Clinical Excellence
PHE	Public Health England
RCT	Randomised Controlled Trial
RSPB	Royal Society for the Protection of Birds
RSWT	Royal Society of Wildlife Trusts
STH	Social and Therapeutic Horticulture
TCV	The Conservation Volunteers
UCL	University College London
WHO	World Health Organisation

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Executive Summary

Background

There is an emerging body of evidence to indicate that contact with nature provides benefits for health and wellbeing. However, literature regarding the health and wellbeing benefits of natural environments rich in nature has been given less attention, particularly in relation to its outcomes for local communities. The Wildlife Trusts commissioned the University of Essex to conduct a literature review to identify existing work that assesses the health and wellbeing benefits of natural environments, with emphasis on those environments rich in wildlife.

Key findings

- Overall there is a large body of evidence from published peer-reviewed and grey literature to suggest that contact with a wide range of natural environments can provide multiple benefits for health and wellbeing.
- These benefits from nature include improvements to physical health (through increased physical activity); and improvements to psychological and social wellbeing, in a number of ways, including: reductions in stress and anxiety, increased positive mood, self-esteem and resilience, improvements in social functioning and in social inclusion.
- There is currently only limited reference to the 'quality' or to the level of biodiversity of the natural environment in the nature and health evidence base.
- Environments rich in wildlife are also associated with improved wellbeing, through emotional, social and psychological benefits. A recent systematic review (Lovell et al., 2014) also found evidence to suggest that biodiverse natural environments may be associated with good health and well-being with improvements ranging from better mental health outcomes, to associations with increased healthy behaviours.

Implications and recommendations

Several health and wellbeing issues face the UK (both at an individual and population level) creating real challenges for public health and for the statutory, voluntary and private sector organisations responsible for health and social care commissioning. These challenges include physical inactivity; the increase in obesity; growing mental ill health, dementia and social isolation; and continuing health inequalities.

In current times where there are real concerns about the burgeoning costs of maintaining good public health and tackling health inequalities, combined with the drive for integration in health and social care services, the multiple outcomes gained from nature-based initiatives

present a possible solution. The need for access to good quality nature has important policy implications for a wide range of sectors, including: public health, mental health and social care, social inclusion, the management of natural places and urban planning. The following recommendations are made:



Public Health - initiatives for the general population

- Increasing access to a wide range of nature based activities within society will provide benefits to public health and provide savings to the UK economy.
- Agencies responsible for providing health and social care services would benefit from recognising the importance of nature-based activities for increasing health and wellbeing within communities.
- Encouraging people to incorporate more green exercise and nature contact into daily routines has the potential to increase wellbeing for health promotion at the population level.
- Public health bodies and Health and Wellbeing Boards (and the equivalent in devolved nations) are urged to focus on increasing the amount, quality and use of natural places in order to improve community health outcomes and reduce health inequalities.

Health and social care - interventions for the vulnerable:

- Commissioners of health and social care services need to be encouraged to take the idea of nature-based interventions more seriously and GPs and other clinicians should be encouraged to consider and recognise the importance of 'Green Prescriptions'.
- The National Institute of Clinical Excellence (NICE) should also be called upon to recommend the use of nature-based interventions alongside other treatment as they represent another treatment choice for GPs, social care commissioners and service users.
- Health and social commissioning services should consider that nature-based activities are an enjoyable, socially acceptable treatment option and that the observed effect adherence levels could prove to be effective in encouraging uptake of treatment.
- Clinical Commissioning Groups (and their equivalents in the devolved nations) need to ensure that nature-based interventions are incorporated into the regional lists of services available for commissioning.
- Managers of nature-based interventions should be proactive in: i) promoting how nature-based interventions have multiple outcomes and are so are particularly suited to integrated health and social care; ii) ensuring that their programmes are included in the lists of services available for commissioning; and iii) target their bids to commissioners with the issues and needs of the particular region in mind, in order to show where a natural intervention may be more effective and appropriate.

Environmental conservation and urban planning

- Directors of Public Health should therefore use their roles to work with departments across local authorities to ensure health considerations are at the heart of planning decisions, particularly those regarding natural spaces.
- LNPs should ensure that urban and rural green spaces are preserved for the benefit of the nation, with planners and developers working to enhance green infrastructure and to encourage public access.
- Providers of nature-based interventions for the vulnerable should recognise the need for targeted advertising of the benefits of their service to service users on personalised budgets.
- The Wildlife Trusts should be encouraged to promote the health and wellbeing benefits of contact with nature more widely to members and non-members alike, to help to raise awareness and to increase nature contact within the UK population.

Conclusion

The significant improvements to wellbeing found as a result of contact with nature in this review have implications for not only the wellbeing and resilience of individuals but also for public health of communities and the management of natural environments. Could one answer to improving both the nation's health and natural places simultaneously be to encourage people to become more active outdoors and interact with nature? It is hoped that this report will give individual Wildlife Trusts an easily accessible and up to date insight into the scientific evidence for nature's potential to improve wellbeing and use it to convince funders of public health and of health and social care that nature is a valuable health resource and so should be preserved.

1. Introduction

1.1 The Wildlife Trusts

There are 47 Wildlife Trusts, covering the whole of the UK, plus the Isle of Man and Alderney. Each Trust is an independent, autonomous charity that is governed locally and is accountable to the local places and communities where they work. They each have local strategies and plans, but work together towards a common vision and share a movement-wide Development Strategy and governance structures that enable joint action where there is benefit in acting together. There are 37 Wildlife Trusts across England, one in Scotland, six in Wales and also one for each of Ulster, the Isle of Man and Alderney. Between them, The Wildlife Trusts have more than 800,000 members and manage more than 2,300 nature reserves which are visited by more than 7,000,000 people each year. Between them, The Wildlife Trusts directly engage more than 386,000 people in events and activities that bring them closer to nature, including 40,000 active volunteers.

The Royal Society of Wildlife Trusts (RSWT) is the central charity of The Wildlife Trust movement. It works to lead the development of The Wildlife Trusts, to make them more effective and efficient, and it provides the movement with a strong collective voice whenever one is needed. The Wildlife Trusts' shared vision is "an environment rich in wildlife for everyone", which they aim to achieve by creating a Living Landscape and securing Living Seas. The Wildlife Trusts collectively work to:

1. Demonstrate how nature works;
2. Inspire people and communities to value and take action for nature; and
3. Champion nature and their work.

Within these objectives, The Wildlife Trusts run a number of projects across the country intended to help improve physical and mental health and to contribute to a sense of wellbeing. The Trusts work in partnership with other organisations such as local NHS trusts, health charities and National Lottery funders for example, to offer access to nature as part of the therapeutic process. These projects take place in a wide variety of different places and landscapes and incorporate many different activities, all with the purpose of promoting health and wellbeing within communities. Much of the movement's other activity is also likely to produce health and wellbeing benefits (either incidentally or indirectly), though it is frequently not promoted in this light.

Collectively, The Wildlife Trusts believe that while a wildlife-rich, healthy natural environment is valuable in its own right and simply for the pleasure it brings to people, it is also valuable for the practically useful goods and services it provides to human beings – in particular its vital contribution to the health, wellbeing and prosperity of people and the local communities in which they live. Further information can be found on The Wildlife Trusts' website.

1.2 The Green Exercise Research Team

There is growing empirical evidence to show that exposure to nature brings substantial mental health benefits and at the same time, physical activity is known to result in positive physical and mental health outcomes. Over the last 11 years at the University of Essex, the Green Exercise Research Team has combined these ideas into a programme of research on 'green exercise' (activity in the presence of nature) and 'green care' (therapeutic applications of nature-based interventions). These address current concerns about the adverse health effects of modern diets, sedentary lifestyles and a disconnection with nature, along with growing evidence that stress and mental ill health have become substantial health problems for many people in industrialised societies.

This cross-disciplinary University of Essex project team is engaged in primary research on: i) the health benefits of green exercise- investigating the mental and physical health benefits of physical activities under exposure to different rural and urban environments; ii) measuring connection to nature; and iii) evaluating a wide variety of green care options in varying contexts (including care farming, facilitated green exercise, ecotherapy and wilderness therapy); and is currently leading research in this field. The Green Exercise Research Team were also involved in conducting the original research that supported Mind's Ecotherapy campaign in 2007 and the Ecominds programme from 2008-2013. More information on this research can be found on the Green Exercise website.

The Green Exercise Research Team is also a leading authority on the use of Participatory Appraisal and Action Research to assess the needs and opinions of communities. With over 25 years' experience of participatory assessment, we have worked with a wide variety of organisations and target groups both within the UK and internationally. The team has developed innovative participatory techniques that engage communities as active participants and this approach encourages community ownership of outcomes so that they are self-sustaining in the longer term.

1.3 Background to research

There is an emerging body of evidence to indicate that contact with nature provides benefits for health and wellbeing. However, literature regarding the health and wellbeing benefits of natural environments rich in nature has been given less attention, particularly in relation to its outcomes for local communities. As the UK's population is growing and ageing, and as economic activity and land-use patterns are changing, pressures on the natural environment are increasing. At the same time, the need for a healthy natural environment to help to address many of the UK's social and economic challenges is also increasing.

Many believe that the investment of time and resources in nature's recovery, and the engagement of people with nature where they live and work could bring mutually supportive benefits to both society and the natural world. As a result, there is an urgent need to demonstrate how natural environments, particularly those rich in biodiversity, can deliver these health and wellbeing benefits. The Wildlife Trusts have therefore commissioned the University of Essex to conduct a literature review to identify existing work that assesses the health and wellbeing benefits of natural environments, with emphasis on those environments rich in wildlife.

It is felt that this work will help to reinforce the case for the protections of the UK's natural environments. It is intended that the review will give individual Wildlife Trusts (and other interested parties) an easily accessible and up to date insight into the scientific evidence for nature's potential as a source of enhanced health and wellbeing. As the first stage in a three-stage project, the literature review will pull together known academic research and selected public policy documents, to investigate and indicate the role that high quality natural environments could play in improving the health and wellbeing of the British population.

The aims of this literature review are therefore to:

- Highlight the health and wellbeing benefits of natural environments rich in nature and wildlife;
- Summarise why nature matters to the health and wellbeing of people in local communities in the UK.

1.4 Methodology

A literature search was conducted in May and June 2014, to identify references on the health and wellbeing benefits of: i) natural environments and ii) more precisely of natural environments rich in nature and wildlife. The following search engines were used to generate references:

- Web of Knowledge
- Web of Science
- Google Scholar

The key words used to search for references included: nature and wellbeing, natural environments, biodiversity, environments rich in nature and health benefits of natural environments.

There was a focus on obtaining published papers which have been peer reviewed as they have more credence, however books, book chapters, published reports, policy documents and conference proceedings were also included, where appropriate.

2. Wellbeing in the UK

2.1 Definitions of wellbeing

2.1.1 What is wellbeing?

The health and wellbeing of an individual is considered to be multifaceted. The World Health Organisation (WHO) defines health as “a state of complete physical, mental and social wellbeing, and not merely the absence of disease or infirmity” (WHO, 1948). Similarly the term ‘wellbeing’ (despite the lack of a universal definition) is also considered to be multi-dimensional, described by Defra (2007) as “a positive physical, social and mental state; it is not just the absence of pain, discomfort and incapacity. It requires that basic needs are met, that individuals have a sense of purpose, and that they feel able to achieve important personal goals and participate in society. It is enhanced by conditions that include supportive personal relationships, strong and inclusive communities, good health, financial and personal security, rewarding employment, and a healthy and attractive environment”.

Following on from this Defra definition, in 2008 the UK Government’s Foresight Project on ‘Mental Capital and Wellbeing’ commissioned the New Economics Foundation (Nef) to examine the construction of wellbeing in more detail by reviewing the inter-disciplinary work of over 400 scientists from across the world.

2.1.2 Five Ways to Wellbeing

The New Economics Foundation subsequently identified five evidenced-based actions to improve wellbeing: i) Connect; ii) Be Active; iii) Take Notice; iv) Keep Learning; and v) Give (Nef, 2008). Nef suggested that if each of these Five Ways to Wellbeing were built into daily routines, health and wellbeing would be enhanced.

Connect

Social interaction and connecting with other people can provide important benefits for health and wellbeing. Social relationships, a sense of ‘belongingness’, interaction and the support of family and friends are important for wellbeing and can also protect against becoming ill, whilst social isolation and exclusion are associated with poorer health (Tones and Green, 2010).

Be Active

The health benefits of engaging in physical activity are well documented. Regular exercise can reduce the risk of cardiovascular disease and associated risk factors such as high blood pressure, high blood cholesterol and diabetes (Department of Health, 2009a). Physical activity can also promote mental wellbeing, leading to improvements in self-esteem, mood and quality of life and a reduction in anxiety and depression (Department of Health, 2009a, 2011; Reed et al., 2013).

Take Notice

People today have busy lives and often fail to ‘take notice’ of their surroundings and the things going on around them. Studies have shown that being aware of what is taking place in the present directly enhances wellbeing and that ‘savouring the moment’ can help to reaffirm life priorities (Brown and Ryan, 2003). Increased awareness and paying attention this particular way is referred to as ‘mindfulness’ (Kabat-Zinn, 1994; Bishop et al., 2004); and defined as “paying attention in the present moment to yourself, others and the world around you” (Mindfulness in Action, 2014). Mindfulness enhances self-understanding and also reduces stress and improves mental health (Feldman et al., 2007; Nef, 2008; Williams, 2010; Chu, 2010; Keng et al., 2011; Howell et al., 2011).

Keep Learning

Learning, whether it is trying something new or learning new skills, has been shown to play an important role in health and wellbeing. For children and young people learning contributes to social and cognitive development, increases self-esteem and social interaction and encourages participation in physical activity (Hall-Lande et al., 2007). In adults learning is associated with: wellbeing; life satisfaction, optimism and self-efficacy; self-esteem and resilience (Feinsten and Hammond, 2004; Hammond, 2004); a sense of purpose and hope; encouraging social interaction and making people feel competent (Tanako et al., 2002). Learning is also protective against depression and in older people in particular, work and educational opportunities can lift them out of a depressive state (Feinsten et al., 2008; Steptoe et al., 2013).

Give

Giving to others by volunteering, joining a community group or helping a friend or stranger can provide substantial wellbeing benefits. Mutual cooperation and working with others can increase neuronal responses in the reward areas of the brain, indicating that social cooperation is intrinsically rewarding (New Economics Foundation, 2008; Rilling et al., 2007). Helping and giving to others contributes to improvements to cognitive and social functioning which is crucial to mental wellbeing (New Economics Foundation, 2008). Feelings of life satisfaction and happiness are also strongly associated with engagement in community activities (New Economics Foundation, 2008). In older people, volunteering is associated with more positive mood and a sense of purpose and supporting others is also associated with reduced mortality (Huppert, 2008; Greenfield and Marks, 2007).



Photo: Courtesy of Avon Wildlife Trust

In this review although these broad definitions of wellbeing are used, wealth and financial security are seen to be separate (although related) issues and beyond the remit of this particular study. Nef's 'Five ways to Wellbeing' offer a pragmatic explanation of how to promote wellbeing and as such are being widely used by the UK Government, the NHS, Local Authorities, many schools and by countless third sector organisations such as Mind and The Children's Society.

2.2 Current challenges to wellbeing in the UK

Several health and wellbeing issues face the UK (both at an individual and population level) creating real challenges for policy makers and for the Government, voluntary and private sector organisations responsible for health promotion and for providing health and social care services. These challenges include the fall in people's physical activity levels in everyday lives; the increase in obesity; growing mental ill health, dementia and social isolation; and continuing health inequalities.

2.2.1 Physical inactivity and obesity

Physical inactivity poses a significant threat to wellbeing and is the fourth leading cause of death globally, accounting for 6% of all deaths (Department of Health, 2004; Health and Social Care Information Centre, 2013) and the fourth highest cause of disease and disability in the UK (Murray et al., 2013). In the UK the costs of physical inactivity to the economy

are £20 billion per year including direct treatment costs and work days lost through sickness (All party commission on physical activity, 2014). Worldwide, physical inactivity accounts for 6% of the burden of cardiovascular disease, 7% of type II diabetes, 10% of breast and colon cancer and 9% of premature mortality (Lee et al., 2012; Health and Social Care Information Centre, 2013). People who are physically active reduce their risk of developing major chronic diseases by 50% and the risk of premature death by 20-30% (Department of Health, 2009a).

The Government has recommended that in order to stay healthy UK adults take part in at least 30 minutes of moderate intensity physical activity five times a week, with children and young people having at least 60 minutes each day (Department of Health, 2011, Health and Social Care Information Centre, 2013). However, despite the well-documented benefits of physical activity, a large proportion of individuals are failing to meet these recommendations. In adults, 33% of men and 45% of women; and in children 79% of boys and 84% of girls, fail to meet the daily recommendations and do not get enough physical activity (Health and Social Care Information Centre, 2013).

In the last 50 years, the diets of most people in the UK have also undergone enormous changes (Popkin, 1998, 1999; Pretty, 2002). On average, an individual will now consume more food calories than they burn, and increasingly will consume more processed, convenience foods that are high in sugar and salt. Obesity is often a consequence of dietary changes and physical inactivity and also poses a significant risk to wellbeing (Health and Social Care Information Centre, 2013). Obesity is a recognised risk factor for a range of conditions, including type II diabetes, cardiovascular disease, specific cancers and diminished life expectancy (NICE, 2006) and is also associated with poor mental health. The incidence in obesity is rising rapidly with 67% of adult men, 57% of adult women and 28% of children being overweight or obese in the UK (Health and Social care Information Centre, 2013). Obesity causes over 30,000 deaths a year in England (DoH, 2004; Foresight, 2007; Health & Social Care Information Centre, 2013b) and estimations concerning the costs of obesity suggest that it costs the NHS 2.3 billion a year¹, contributes to 18 million days of sickness per year and has an overall cost of up to £4.2 billion a year in England (Foresight, 2007). Physical inactivity and obesity therefore pose a significant risk to health and well-being and are a major health challenge for public health.

2.2.2 Mental ill health, dementia and social isolation

Mental ill health

Every year in the UK, one in four people experience a significant mental health problem (Mental Health Foundation, 2013). Anxiety and depression are commonplace and by 2020 it is predicted that depression will be the second most common cause of disability in the developed world (World Bank, 1993). For women in 'low and middle' and 'high' income countries in 2004, depression was the leading cause of

1 reported figure from 2007

the disease burden (WHO, 2008) and the World Mental Health Survey found that on average 1 in 20 people had an episode of depression in the previous year (Marcus et al., 2012).

In 2009-2010 the total cost of mental health problems in England was estimated at £105.2 billion (The Centre for Mental Health, 2010). The majority of these costs relate to those who experience mental health problems along with their families, but there are also sizeable costs for taxpayers and for business, estimated at £1,000 per employee, per year (NHS Choices, 2013). Mental ill health costs more to society than crime, and public spending on mental health services is continually rising alongside the cost of anti-depressants (Sainsbury Centre for Mental Health, 2003). In 2011 46.7 million anti-depressant prescriptions were dispensed in England, costing £270.2 million and increasing by 22.6% from 2010 (NHS Information Centre, 2012). Despite this increase, the share of the budget for mental ill health is far lower proportionally than the burden of mental ill health: poor mental health accounts for 23% of the burden of disease, whilst accounting for only 13% of the NHS budget in England (Centre for Economic Performance's Mental Health Policy Group, 2012). Mental ill health is therefore a major public health issue, having substantial effects on the country's wellbeing.

Dementia

With an ageing population, addressing dementia is also a growing challenge, with an increasing number of people living with this condition (Knapp et al., 2007). In the UK 800,000 people have dementia and projections suggest this is likely to rise to one million by 2012 (Alzheimer's Society, 2012). Dementia currently costs the UK between £17-23 billion per year, a figure which will reach £34.8 billion by 2026 (Knapp et al., 2007; Alzheimer's Society, 2012, 2013; The Kings Fund, 2008). There are also 670,000 people in the UK who are primary carers for people with dementia, saving health and social care providers £8 billion per year (Alzheimer's Society, 2012). The importance of providing care for the growing number of older people has been acknowledged by the UK Government, with the promotion of dementia care vital in order that people can 'live well' with dementia (Department of Health, 2009b).

Social isolation

Mental wellbeing is affected by how connected to other people we feel, with the links to, and support from our families, friends, local communities and the wider society. This connection and interaction has a positive effect on our health and happiness (Bird, 2007; Searle, 2008; Robitaille, 2010; Helliwell et al., 2013). A large number of adults and young people in the UK are becoming disconnected from other people, experiencing loneliness and social isolation (Hall-Lande et al., 2007; Windle et al., 2011; Wood et al., 2012a) and this isolation is frequently associated with older people, the mentally ill, and the disabled, impoverished and disaffected members of society (Mental Health

Foundation, 2010; Windle et al., 2011). Social isolation has been shown to result in a reduced quality of life, depression and low self-esteem and can also predict mortality and morbidity (Cornwell and Waite, 2009; Pearce and Pickard, 2012; Steptoe et al., 2013).

2.2.3 Health Inequalities

Health and mortality

The WHO defines health inequalities as "differences in health status or in the distribution of health determinants between different population groups" (WHO, 2014) and according to Allen and Balfour (2014), health inequalities are the result of widespread and systematic social and economic inequalities. Throughout the UK there are a number of health inequalities which pose a real challenge for wellbeing.

People in higher socioeconomic groups have better overall health and fewer disabling conditions than those in lower socioeconomic groups (Graham, 2004; House of Commons, 2009). Disadvantaged children have a higher prevalence of mental disorders, experience overcrowding in the home, stress and an increased likelihood of having a disrupted family life (Graham, 2004). Adults in lower socioeconomic groups suffer health inequalities, over and above the effects of childhood disadvantage, including being more vulnerable to multiple health difficulties and having a marked increase in premature mortality. Furthermore, women in the most deprived groups succumb to poor health 13.6 years earlier than those in the least deprived groups (Royal College of Nursing, 2012).

Although life expectancy has increased in the last three decades, this increase in life expectancy in the poorer groups has failed to match the improvements made by those in better off groups (Graham, 2004). In fact the risk of mortality for those in the lowest group is 2.9 times greater than for individuals in the highest socioeconomic group (Graham, 2004; House of Commons, 2009). In England alone, dying prematurely as a result of health inequalities costs 1.3-2.5 million extra lives per year (Allen, 2013).

Neighbourhoods

People in the lowest socioeconomic groups are also more likely to live in the most deprived neighbourhoods (Allen and Balfour, 2014). Disadvantaged neighbourhoods are more likely to have environmental characteristics displaying a risk to health, such as: poor housing, higher crime rates, poorer air quality, a lack of play spaces and high levels of traffic. On average, people in deprived areas have 17 years less disability-free life and die on average 7 years earlier, than those in the richest areas (Royal College of Nursing, 2012; Allen, 2013).



Photo: Courtesy of London Wildlife Trust

Deprived neighbourhoods are also characterised by a lack of green, natural spaces. Regular use of good quality natural environments brings health and wellbeing benefits, but there are clear differences in the access and use of natural environments between different groups of people in the UK (Allen and Balfour, 2014). Those living in the most deprived areas are ten times less likely to live in the greenest areas. The most affluent 20% of wards in England have five times the amount of parks or general green space than the most deprived 10% of wards. Given that the evidence shows that health and nature are closely linked, the quality of both natural and built environments therefore has a significant impact on the nation's health and wellbeing (Allen and Balfour, 2014).

3. Nature and Wellbeing

This chapter: i) gives an overview of the published evidence relating to the health and wellbeing benefits of contact with nature; ii) specifically examines the effect of being in natural environments rich in nature and wildlife; and iii) highlights the way in which contact with natural environments can facilitate each of the Five Ways to Wellbeing.

3.1 Health and wellbeing benefits of contact with nature - The evidence

There is currently an increasing (and convincing) evidence base to show that exposure to the natural environment positively affects physical health and mental wellbeing. Originating from the much-quoted and widely cited studies of Moore (1982) and Ulrich (1984) on 'viewing' nature, later studies have demonstrated significant corroborative findings from: i) a variety of 'natural' settings (including open countryside, fields, remote wilderness, parks, urban green spaces, allotments and gardens) and ii) different levels of engagement with nature (Maller et al., 2002; Morris, 2003; St Leger, 2003; Tabbush and O'Brien, 2003; Pretty, 2004; Pretty et al., 2004; Pretty et al., 2005; Louv, 2005; Driver et al., 2006; Pretty et al., 2007; Van den Berg et al., 2007; Barton et al., 2009; Hansen-Ketchum et al., 2009; Thompson Coon et al., 2011; Ward-Thompson et al., 2012; White et al., 2013; Brown, Barton and Gladwell, 2013; Gladwell et al., 2013; White et al., 2013; Wood et al., 2014; Bragg, 2014).

There have also been a number of comprehensive reviews of the published literature concerning nature, health and wellbeing (see for example - Rohde & Kendle, 1994; Seymour, 2003; Frumkin, 2003; De Vries et al., 2003; Health Council of the Netherlands, 2004; Maas et al., 2006; Pretty et al., 2005; Pretty et al., 2006; Bird, 2007; Barton and Pretty, 2010; Bowler et al., 2010; Pretty et al., 2011; O'Brien and Morris, 2013; Allen and Balfour, 2014). Interest in this field of research has come from a cross-section of disciplines, including psychology, environmental health, environmental conservation, ecology, horticulture, landscape planning, urban design, leisure and recreation, public health policy and medicine. The key physical and mental health benefits of contact with nature and the corresponding studies are outlined in Table 1.

Table 1: Evidence for the health and wellbeing benefits of contact with nature

Benefit	Key Studies (By author)
■ Reduction in anxiety and stress	Parsons, 1991; Ulrich et al., 1991; Lohr et al., 1996; Rubinstein, 1997; Parsons et al., 1998; Gullone, 2000; Hartig et al., 2003; Laumann et al., 2003; Grahn and Stigsdotter, 2003; Fredrickson and Branigan, 2005; Plante et al., 2006; Maas et al., 2006; Van den Berg et al., 2007; Velarde, Fry and Veit, 2007, 2010; Ward-Thomson et al., 2012; White et al., 2013; Roe et al., 2013b.
■ Improvement of mood	Hartig et al., 1991; Ulrich et al., 1991; Hartig et al., 1996; Rubinstein, 1997; Hartig et al., 2003; Van den Berg et al., 2003; Pretty et al., 2005, 2006, 2007; Barton and Pretty, 2010; Barton et al., 2009, 2011; Roe and Aspinall, 2011a.
■ Improvement of self-esteem	Pretty et al., 2005, 2006, 2007; Barton and Pretty, 2010; Barton et al., 2009, 2011
■ Improvement of psychological wellbeing	Browne, 1992; Kaplan and Kaplan, 1989; Hartig et al., 1991; Kaplan, 1992, 1995; Chalfont, 2006; Joye, 2007; Nisbet and Zelenski, 2011; White et al., 2013; Wolsko and Lindberg, 2013
■ Improvement in attention and concentration	Hartig et al., 1991; Tennessen and Cimprich, 1995; Lohr et al., 1996; Wells, 2000; Kuo, 2011; Taylor et al., 2001, 2002; Hartig et al., 2003; Laumann et al., 2003; Van den Berg et al., 2003; Ottosson and Grahn, 2005; Aspinall et al., 2013; Wolsko and Lindberg, 2013
■ Reduction in symptoms of ADHD in children	Roe and Aspinall, 2011b
■ Increase in cognitive restoration	Faber Taylor et al., 2002; Kuo, 2001; Aspinall et al., 2013
■ Improvements to physical health	Humpel et al., 2002; Maas et al., 2008; Park et al., 2007, 2010; Coombes et al., 2010; Lee et al., 2010; Gladwell et al., 2013
■ Promotion of physical activity	Bowler et al., 2010; Thompson Coon et al., 2011; Wood et al., 2012; Gladwell et al., 2013; Wood et al., 2014
■ Reduction of crime rates	Kuo et al., 1998a; Kuo and Sullivan, 2001a,b
■ Increased immunity	Rohde and Kendle, 1994; Parsons et al., 1998; Li et al., 2007; Park et al., 2010; Lee et al., 2011
■ Improved perceptions of general health	De Vries et al., 2003; Mass et al., 2006
■ Increased social contact	Coley et al., 1997; Kuo et al., 1998b; Kweon et al., 1998; Ward Thompson, 2002; Heinrichs et al., 2003; Kim and Kaplan, 2004; Sullivan et al., 2004; Maas et al., 2009; Park et al., 2007, 2010; de Vries, 2010; Pretty et al., 2011.

Source: Adapted from Barton, 2008 and Bragg, 2014.

The health benefits of nature are addressed in this report under three levels of engagement: i) viewing nature; ii) contact with nearby nature and; iii) active participation in nature-based activities (Pretty et al., 2005).

3.1.1 Benefits of natural views

Viewing nature from a window in a range of contexts can lead to health and wellbeing benefits such as recovery from mental fatigue and improvements to mental wellbeing (Kaplan, 1992; Maller, 2006). Patients with natural views in hospitals recover from illness and surgery more quickly, spend less time in hospital, tend to have fewer complications and need less pain killers (Diette et al., 2003; Maller, 2006). In a prison environment a cell with a natural view can reduce stress, psychological symptoms (such as headaches and digestive illness); and can reduce the number of sick calls to inmates (Ulrich, 1982; Moore, 1982; West, 1985). In the workplace views of nature are associated with reduced stress and increased job satisfaction (Kaplan and Kaplan, 1989; Maller, 2006; Hine et al., 2007), whilst children with access to natural views from the home have enhanced cognition and concentration and better self-discipline than children without access to natural views (Kaplan, 2001; Taylor et al., 2002). Views of nature during a commute are also beneficial to wellbeing improving recovery from stress and reducing the likelihood of future stress (Parsons et al., 1998). The design of landscaped grounds in retirement homes also plays a role in resident wellbeing; natural elements increase residents' psychological, social and physical wellbeing (Browne, 1992; Pretty et al., 2003; Chalfont, 2007). Viewing natural scenes can result in short term recovery from stress, increased recovery from physical illness and long term increases in health and wellbeing (Velarde et al., 2007).

Pictures of nature can also be beneficial to wellbeing. Viewing pictures of nature, particularly those depicting water, have a more positive effect on emotional wellbeing than pictures of built environments which result in a reduction in attention and interest (Ulrich, 1981). Pretty et al. (2005) compared the effects of viewing four types of scenes whilst engaging in physical activity - a) blank screen; b) urban unpleasant scenes (cities lacking green space); c) urban pleasant scenes (buildings with surrounding nature); d) rural unpleasant scenes (spoilt natural landscapes). The unpleasant scenes reduced the positive effects of activity on self-esteem, whilst the pleasant scenes led to greater increases in mood and self-esteem than exercise alone (Pretty et al., 2005), emphasising the importance of both rural and urban nature for wellbeing. Roe et al. (2013a) examined brain reactions to urban and natural landscape and found that natural scenes consistently engendered more positive reaction than urban scenes. In addition, pictures of nature can reduce heart rate (Laumann et al., 2003), mean arterial blood pressure (Pretty et al., 2005) and systolic blood pressure (Duncan et al., 2014), indicating that viewing nature has a relaxing effect on the cardiovascular

system and autonomic function (Laumann et al., 2003; Pretty et al., 2005; Brown, Barton and Gladwell, 2013; Duncan et al., 2014).

Overall evidence therefore suggests that viewing nature and natural landscapes has a strong positive health effect and landscapes devoid of nature have less positive and in some cases negative effects on health.

3.1.2 Benefits of nearby nature

Local green space and nearby nature are vital for individuals regardless whether this consists of an urban park or a rural wilderness area (Barton and Pretty, 2010). Being in the presence of nearby nature, either intentionally or incidentally, plays an important role in human health and wellbeing (Pretty et al., 2005). Improved general health has been found to be related to increased access to green space regardless of the socioeconomic status of individuals and income-related inequality in health is moderated by exposure to green space (Marmot Review, 2010; Allen and Balfour, 2014). Perceived neighbourhood greenness is strongly associated with better mental and physical health, with those living in highly green areas being between 1.37 and 1.60 times more likely to have better health (Sugiyama et al., 2008)². Longevity is also associated with access to green space (Takano et al., 2002).

Research has identified links between the amount of accessible green space in an area and psychological wellbeing, indicating that accessible green space helps recovery from stress, protects from future stress and improves concentration (Maller et al., 2002; Takano et al., 2002; De Vries et al., 2003; Grahn and Stigsdotter, 2003; Nisbet and Zelenski, 2011; Roe et al., 2013). People living in urban areas with larger amounts of green space show significantly lower mental distress and higher well-being (White et al., 2013); and in another recent study, Roe et al. (2013b) report lower levels of stress and steeper decline in cortisol secretions in individuals living in greener urban areas of Scotland. Nature close to the home is also important for the wellbeing of children (Kaplan and Kaplan, 1989; Thomas and Thompson, 2004; Ward-Thompson et al., 2008), increasing their ability to cope with stressful life events, directed attention and cognitive function (Wells, 2000; Wells and Evans, 2003).

It is not only in our homes that the presence of nearby nature is important, access to nature in health care settings also benefits mental wellbeing via increases in relaxation and the ability to cope, improvements to mood and reductions in stress levels (Cooper-Marcus and Barnes, 1995; Whitehouse et al., 2001). The type of nature close to where individuals work has also been found to be an important factor in quality of life (Chiesura, 2004).

Access to nearby forest environments (either in rural or urban settings) has also been identified to benefit wellbeing (Li et al., 2007; Park et al., 2010, 2011; Lee et al., 2011; O'Brien and Morris, 2013). Forest environments can increase immunity from disease by increasing

² However, the difficulties in determining the direction of cause and effect with the effects of nearby nature must be noted, as healthier, happier, more social and more active individuals may choose (or have the ability to choose) to live in greener areas (Pretty et al., 2011).



Idle Valley Recovery Project © Matthew Roberts

natural killer T cell activity which rejects tumours and infected cells; and increasing chemicals which destroy infected cells (Park et al., 2010). Forest environments also increases the number of anti-cancer proteins, and improves both physical and mental health (Park et al., 2010; Lee et al., 2011; Park et al., 2011).

A higher number of trees and vegetation in an area are associated with greater use and time spent in the environments (Kuo et al., 1998) and this access to nearby nature can also indirectly encourage healthier behaviours such as increased physical activity levels and enhanced social interaction. Individuals with easy access to nature are three times as likely to be active (Wells et al., 2007; Bowler et al., 2010) and the level of 'greenness' in a neighbourhood is associated with greater participation in moderate to vigorous physical activity (Almanza et al., 2012). The benefits for children are more pronounced, with access to nature during school being associated with increased levels of physical activity and with children who are exposed to green spaces for more than 20 minutes per day engaging in five times more moderate to vigorous physical activity (Almanza et al., 2012). Access to nearby nature can facilitate social interaction, providing direct benefits for health (Ward Thompson, 2002; Coley et al., 2007) and greener neighbourhoods have been shown to give rise to stronger neighbourhood ties (Kuo et al., 1998).

Nature near the home also reduces the risk of crime, aggression and domestic violence (Kuo and Sullivan, 2001a, 2001b; Brisman, 2007; Billiteri, 2008). Residents living in areas with high levels of vegetation report less aggressive and violent behaviour; evidence has identified a 52% reduction in property and violent crimes in areas rich in nature (Kuo and Sullivan, 2001a, 2001b; Brisman, 2007; Billiteri, 2008; Pretty et al., 2013).

3.1.3 Benefits of exercise in nature – Green exercise

Natural ecosystems provide an ideal setting for exercise and activity, and Pretty et al. (2003) hypothesised that if physical activity took place in natural environments (termed 'green exercise'), the synergistic benefits of this green exercise could be even more beneficial than either exercise or contact with nature alone. Further studies have since supported this premise and have examined the effects of green exercise in more detail (Pretty et al., 2004, 2005, 2006, 2007; Pretty, 2004; Mind, 2007; Hine et al., 2007; Hine et al., 2008; Hine, 2008; Barton et al., 2009; Pretty et al., 2009; Barton and Pretty, 2010; Hine et al., 2011; Thompson Coon et al., 2011; Pretty et al., 2011; NEA, 2011; Wood et al., 2012 a, b; Gladwell et al., 2013).

From a wide variety of green exercise research three broad health outcomes emerge (Pretty et al., 2011): i) improvement of psychological wellbeing (by enhancing mood and self-esteem); ii) generation of physical health benefits (by reducing blood pressure and burning calories) and iii) facilitation of social networking and connectivity (by enhancing social capital). Furthermore, in a green exercise dose-response study, Barton and Pretty (2010) found that many different types of green exercise in contrasting habitats, for varying durations, were found to lead to improvements in self-esteem and mood. However, the greatest benefits came within the first five minutes of activity followed by positive but diminishing returns (Barton and Pretty, 2010).

Overall there is a large body of evidence to suggest that contact with a wide range of natural environments, in a variety of contexts, can provide benefits for health and wellbeing.

3.1.4 Nature-based interventions for vulnerable groups

The evidence relating to contact with nature and green exercise for the general population also suggests that activities in natural settings have therapeutic properties and that people with lower levels of wellbeing (e.g. lower self-esteem and mood), often experience greater benefits (Pretty et al., 2007, Barton and Pretty, 2010). Therefore, when these activities in nature are delivered as facilitated interventions, they can provide a range of applications for less healthy or vulnerable groups within society. Such nature-based interventions have also been collectively termed 'green care' (Pretty, 2006; Hine et al., 2008; Sempik et al., 2010; Sempik and Bragg, 2013) or 'ecotherapy' (Mind, 2007, 2013; Bragg et al., 2013).

Nature-based interventions take place in a number of different natural contexts and consequently involve various landscape types, all of which allow for slightly different approaches. This results in a wide range of approaches which enables the choice of the most appropriate treatment option for a specific individual as 'bespoke' care. Nature-based initiatives usually consist of a facilitated, regular and specific intervention, for a *particular* participant (or group of service users), rather than simply a 'natural' experience for the general public (Sempik et al., 2010; Sempik and Bragg, 2013). There is a wide range of vulnerable groups that are currently benefitting from such nature-based interventions, including (but not restricted to): people with mental health problems, people suffering from mild to moderate depression, people with dementia, adults and children with learning disabilities, adults and children with ASD, those with a drug or alcohol addiction history, disaffected young people, and adults on probation.

Therefore there are several different types of nature-based intervention and the area is very diverse. The common linking ethos however is the contact with nature – i.e. using a coherent and deliberate strategy

to generate health, social or educational benefits using nature. Seven key green care interventions currently in use in the UK include: i) Social and Therapeutic Horticulture (STH) and Horticultural Therapy (HT); ii) Animal Assisted Interventions (AAI); iii) Care farming; iv) Green exercise therapy; v) Ecotherapy³; vi) Facilitated environmental conservation; and vii) Wilderness Therapy.

There is a substantial (but not yet complete) evidence base relating to the health and well-being effects of nature-based interventions, which highlights benefits ranging from improvements to physical health and mental wellbeing, increases in social and cognitive functioning and reductions in social isolation, through to increases in coping ability, empowerment and work skills. More information relating to benefits of specific nature-based interventions can be found in a number of recent reviews of the literature (see for example: Hine et al., 2009; Sempik et al., 2010; Grandgeorge and Hausberger, 2011; Annerstedt and Währborg, 2011; Sempik and Bragg, 2013; Iancu et al., 2013; Bragg et al., 2013; Husk et al., 2013; Bragg, 2014).

In their review of the literature on the health and wellbeing effects of conservation activities, Husk et al. (2013) have developed a model to illustrate the pathways through which health and wellbeing impacts may come about, following participation in environmental enhancement and conservation activities (Figure 1). Although specifically developed for environmental conservation activities, the model could have a wider application and could be adapted for and applied to other nature-based interventions. In addition, the model may serve as a useful tool to explain how the multiple elements of green care interventions can provide multiple health, wellbeing and social benefits.

3 Ecotherapy (in its specific rather than generalised meaning) is a psychological nature-based approach that is rooted in the experience of nature, which acknowledges the interdependence of human health with the health of the environment (Chalquist, 2009)

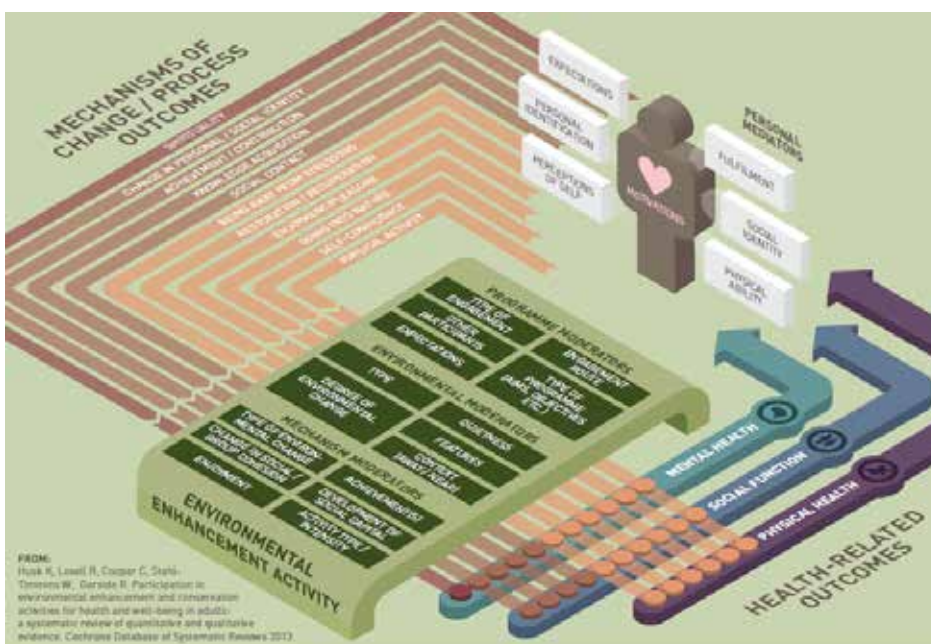


Figure 1. Wellbeing and the environment: Linking conservation activities and health

Notes: The model illustrates the pathways through which health and wellbeing impacts may come about following participation in environmental enhancement and conservation activities. Health-related outcomes are affected by 'mechanisms of change and process outcomes' which are broad themes derived from the research evidence and either link the activity to the health-related outcomes or are considered as desirable outcomes in their own right. Moderators are the factors which might influence the outcomes and have been categorised into three sources – mechanisms of action, environment in which an activity is undertaken and those related to the types of activity itself (i.e. the programme). Personal mediators are included to demonstrate that the evidence suggests that factors such as personal expectations and social identity may influence the outcomes. Motivation is considered separately because it emerged as a key factor as to how individuals approach and potentially benefit from the programme. Finally, the circular arrows are used to demonstrate that participation is a dynamic process whose outcomes can change and affect one another. These outcomes cannot therefore be considered in isolation or as strictly independent (e.g. increased social contact may improve a participant's confidence which may result in further opportunities for social contact, ability to take on leadership roles and so on).

3.1.5 The status of the current nature and health evidence base

The evidence base regarding the health benefits of contact with natural environments is continually expanding from research across the globe, and the weight of evidence suggests that the effects are convincing. However there are still some gaps in the literature and some methodological issues which could benefit from further research, including:

- Limited UK research – although research from the UK is ever increasing, much of the peer-reviewed evidence is from Scandinavia and the US.
- Lack of longitudinal data - many studies do not administer follow-up measures to analyse the effects of long term participation.
- Methodological issues - fewer studies are available that are standardised, have a control group (e.g. RCTs) and that have large sample sizes.

More details of these research issues can be found in Appendix A.

3.1.6 Key findings: Nature and wellbeing evidence

- Overall there is a large body of evidence from published peer-reviewed and grey literature to suggest that contact with a wide range of natural environments can provide multiple benefits for health and wellbeing.
- The evidence is convincing and increasingly shows that nature is associated with enhanced physical and mental health, with benefits to wellbeing demonstrated not only through contact with nature and participation in nature-based activities and interventions, but also through simply viewing natural scenes.
- These health and wellbeing benefits from nature include improvements to physical health (through increased physical activity); improvements to psychological and social wellbeing, in a number of ways, including: reductions in stress and anxiety, increased positive mood, self-esteem and resilience, improvements in social functioning and in social inclusion.
- The evidence base regarding the health benefits of contact with natural environments is continually expanding from research across the globe however there are still some gaps in the literature and some methodological issues which could benefit from further research.

3.2 Health and wellbeing benefits from natural environments rich in wildlife

The previous section gives an overview of the published evidence relating to the health and wellbeing benefits of contact with nature. This evidence refers to benefits from contact with a range of natural contexts from urban greenspaces to wilderness locations but has made limited reference as to the 'quality' of the natural environment or to the level of biodiversity and whether there are specific health and wellbeing

effects of greenspaces associated with more wildlife and biodiversity. The following section specifically examines the literature to assess the particular effects on health and wellbeing of natural environments rich in nature and wildlife.

3.2.1 Definition of biodiversity in this report

There are many definitions of biodiversity available, the Convention on Biological Diversity (CBD, 1993) defines biodiversity as: *"The variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are party; this includes diversity within species, between species and of ecosystems"*. Natural England defines it as *"the variety of life on Earth [encompassing] the whole of the natural world and all living things with which we share the planet"* (Natural England, 2012).

In this report however we refer to biodiversity in a more specific sense, referring to natural environments rich in wildlife; places that are home to communities of plants, animals and fungi; that are typically thought of as being 'natural' and seen as valuable for the contribution they make to the biological richness of their immediate surroundings, or of the wider environment.

3.2.2 Ecosystem services and health and wellbeing

Our natural world and its constituent ecosystems provide a range of goods and services essential to man (NEA, 2011). Ecosystem services are defined as the *"benefits people obtain from ecosystems, such as food, water, flood and disease control and recreation"* (Department for Communities and Local Government, 2012). Natural environments provide food, water, fuels and wood (Norris et al., 2011); all of which are required for human existence. Natural environments rich in wildlife can regulate and modulate these ecosystem processes and functions (Lovell et al., 2014) decreasing air pollution, reducing noise and intercepting water, thus regulating climate, food and disease and purifying water (Pretty et al., 2011; Norris et al., 2011). For example, the reduction of air pollution via increased plant abundance is associated with decreased incidence of cardiovascular and respiratory disease (Clark et al., 2014).

Ecosystems and their services are constantly changing (NEA, 2011) but reductions in ecosystem quality, biodiversity and any ultimate loss of such natural environments, may decrease the services they are able to provide; and as a result impact on human health and wellbeing (Diaz et al., 2006; Sala et al., 2009; Mlambo, 2012; Lovell et al., 2014). This may in turn lead to the increase in spread of zoonotic diseases for example, or result in inadequate nutrition (Lovell et al., 2014). These supporting, regulating, and provisioning ecosystem services (NEA, 2011) that nature provides therefore directly impact human health and wellbeing.

3.2.3 The importance of natural environments rich in wildlife and biodiversity

In addition to the importance of the supporting, regulating, and provisioning services derived from nature, there has been increasing interest in the relationship between biodiversity and human

wellbeing through ‘cultural’ ecosystem services (Church et al., 2011; NEA, 2011; Lovell et al., 2014), since the publication of the UK’s National Ecosystem Assessment (NEA) in 2011. Cultural ecosystem services are the ‘nonmaterial’ benefits of aesthetics, leisure, recreation and a sense of place (Clark et al., 2014; Lovell et al., 2014). The importance that we place on cultural services from natural environments is evident in the amount of time and money we spend to enable us to experience nature and in the rise in environmental group membership worldwide (Clark et al., 2014).

Evidence suggests that time spent in natural environments of high value increases health (Barton et al., 2009) and links between health status and the condition of the local natural environment have also been observed (Clark et al., 2014). Environments rich in nature are also associated with improved wellbeing (Huby et al., 2006), with visits to areas rich in nature providing emotional, social and psychological benefits such as improvements in self-esteem and mood (Huby et al., 2006; Curtin et al., 2009; Barton et al., 2009; Lemieux et al., 2012; Clark et al., 2014). Several studies have highlighted the positive association between richness of wildlife and plant species within an environment with mental wellbeing (Fuller et al., 2007; Dalliner et al., 2012; Clark et al., 2014). Wellbeing is increased in individuals who perceive themselves to be in areas more diverse in birds, butterflies and plants (Clark et al., 2014).



Photo: Courtesy of Tim Keeton, The Wildlife Trusts

There is also evidence for the importance of landscapes rich in nature close to the home, with the proximity and quantity of natural spaces in the local environment being related to fewer health outcomes and risk factors (see section 2.2.4; Lovell et al., 2014). Degradation of the natural environment can exert adverse effects on health and wellbeing, particularly mental wellbeing, greater than the adverse effects associated with economic decline, nutritional threats and pollution (Speldewinde et al., 2009; Lovell et al., 2014). Individuals living within 300m of an environment rich in nature and wildlife engage in more physical activity (Bjork et al., 2008; de Jong et al., 2012) and proximity to a national park is associated with increased life expectancy (Poudyal et al., 2009). Furthermore, psychological wellbeing and neighbourhood satisfaction increase in relation to greater species richness and abundance and increased vegetation density (Luck et al., 2011).

3.2.4 The status of the current biodiversity and health evidence base

Despite the evidence highlighted above and in the reviews of the general nature and health literature covered in section 3.1, the health benefits of environments rich in nature and wildlife specifically, have until recently not been fully and consistently assessed. Recently however, a review of the literature by Lovell and her team at the European Centre for Environment & Human Health (Lovell et al., 2014) was conducted, using systematic and robust methods, to assess the state and nature of the current body of evidence, and to examine whether biodiverse environments promote good health and wellbeing.

This systematic review revealed that there were 17 studies that specifically looked at the links between natural environments rich in biodiversity and health; a seemingly small number when compared to the plethora of studies examining the relationship between contact with non-specific natural environments and health and wellbeing. Lovell et al. (2014) found some evidence to suggest that biodiverse natural environments may be associated with good health and well-being. Nine out of 14 quantitative studies showed one or more positive relationships between natural areas rich in wildlife and health – where ‘health’ ranged from better mental health outcomes following nature contact, to associations with an increased incidence of healthy behaviours.

The review however also indicated that much of the existing evidence regarding the effect of biodiverse landscapes on human wellbeing is ‘inconclusive’ and that the causality of the benefits is not always clear (Clark et al., 2014; Lovell et al., 2014). In addition, the review highlighted the challenges in comparing multidisciplinary studies which use a range of different approaches and methods (Appendix A).

Nevertheless, the authors concluded that:

- the relationship between biodiversity and health is multidimensional and is not always clear cut (increasing biodiversity may not increase health in all situations and vice versa);
- the existing ‘weight of evidence’ does suggest that “*there is value in continuing to explore associations between biodiverse environments and good health and wellbeing*” (Lovell et al., 2014, p.16); and
- more high quality research is needed to provide a more reliable evidence base (Lovell et al., 2014).

3.2.5 Key findings: Natural environments rich in wildlife and wellbeing evidence

- Environments rich in wildlife are also associated with improved wellbeing, through emotional, social and psychological benefits such as improvements in self-esteem and mood.
- However, there is currently only limited reference to the ‘quality’ or to the level of biodiversity of the natural environment in the nature and health

evidence base. The health benefits of environments rich in nature and wildlife specifically had until recently not been fully assessed.

- Lovell et al. (2014) performed a systematic review and found evidence to suggest that biodiverse natural environments may be associated with good health and well-being - ranging from better mental health outcomes, to associations with increased healthy behaviours.
- It is generally understood that the loss of natural environments rich in wildlife may ultimately decrease the ecosystem services they are able to provide; and as a result negatively impact on human health and wellbeing.
- The literature review concluded that the relationship between biodiversity and health is multidimensional but increasing biodiversity may not increase health in all situations.
- The existing 'weight of evidence' does suggest that *"there is value in continuing to explore associations between biodiverse environments and good health and wellbeing"* (Lovell et al., 2014, p.16).

3.3 How nature contributes to the Five Ways to Wellbeing

The published evidence shows the convincing links between contact with natural environments and human health and wellbeing. Wellbeing is acknowledged to be a multifaceted concept, and so the promotion of wellbeing is therefore also multidimensional. Those responsible for public health, for commissioning health and social care services and those organisations interested in promoting health and wellbeing in conjunction with nature-based interventions, may find it useful to promote how nature can contribute to wellbeing.

Many of these organisations are already using Nef's Five Ways to Wellbeing as a framework or as an easily understandable way of promoting healthier lifestyles and good wellbeing to the general public. In this section therefore we highlight how contact with nature and involvement in nature-based interventions has been shown to specifically facilitate each of the Five Ways to Wellbeing: i) Connect; ii) Be Active; iii) Take Notice; iv) Keep Learning; and v) Give.

3.3.1 Connect - Nature, social interaction and connection to nature

Engaging in activities within natural environments both directly and indirectly promotes social interaction and connects individuals to others (Pretty et al., 2011; NEA, 2011), both of which are important for wellbeing (Tones and Green, 2010). Modern towns and cities lacking in greenspace restrict social contact as people are not attracted to their surrounding environments and tend to stay inside. Evidence suggests that the more trees and vegetation in an area, the more that people use it and spend time in it (Coley et al., 1997; Kuo et al., 1998; Pretty et al., 2011). Greenspaces therefore give individuals an opportunity to meet new people, an opportunity not readily provided elsewhere in society.

Greenspaces in urban areas for example facilitate social connection, as people are inclined to go outdoors and therefore have contact with each other, increasing the likelihood of social interaction.

This social contact can give rise to stronger neighbourhood ties and help to build stronger communities and connect people through groups and networks (Pretty et al., 2011). Direct involvement in conservation group activities for example has also been found to increase social networking and to foster a sense of belonging (Burls and Caan, 2004; Townsend and Marsh, 2004; Moore et al., 2006; Husk et al., 2013; Gladwell et al., 2013; Bragg et al., 2013; Bragg, 2014). Most nature-based interventions for vulnerable people are largely group-based and cater for several groups of people or individuals at the same time, often also involving participants who are 'well' (e.g. local volunteers). Everyone carries out activities together as a team, which can further break down barriers and encourage social inclusion (Bragg et al., 2013).

The increased connection that nature-based initiatives foster is not restricted to the human-to-human connection, but also to the connection between people and nature (Bragg, 2014). Activities within natural environments have also been shown to increase connectedness to nature, which itself is an important predictor of subjective wellbeing (Mayer and Frantz, 2004; Hine et al., 2008; Bragg et al., 2013). An individual receives a number of health and wellbeing benefits when they are connected to nature. Evidence suggests that the positive effects derived from contact with nature are mediated by increases in connection to nature (Mayer et al., 2009). In an age where we are increasingly disconnected from other people and from nature, contact with nature can therefore help to reconnect us both with others and with the outdoors, which in turn can improve our wellbeing (RSPB, 2010; Moss, 2012; Bragg et al., 2013; Bragg, 2014).



Photo: Courtesy of Hampshire & Isle of Wight Wildlife Trust

3.3.2 Be active - Nature and physical activity

Natural environments can play a key role in increasing physical activity levels (Mind, 2007), and can do so in three contexts: i) physical activity as a result of nature nearby the home; ii) incidental activity as a result of nature-based activities; iii) active participation in activity within nature.

Individuals with easy access to nature are three times more likely to participate in physical activity and 40% less likely to become overweight or obese (Wells et al., 2007; Bowler et al., 2010). Nature near the home has been shown to facilitate physical activity in adults and young people (Humpel et al., 2002; Cohen et al., 2006; Roemmich et al., 2006; Kaczynski et al., 2008; Coombes et al., 2010) and open spaces such as parks can provide important places for people to be active, especially in urban areas (Coombes et al., 2010). There is also strong and significant reduction in the odds of achieving physical activity recommendations with increasing distance from local green space (Coombes et al., 2010). Young people from rural areas with easy access to green space are more active than children from urban areas (Ogunleye et al., 2011), suggesting that improving access to green space can therefore encourage people to be more active (Coombes et al., 2010).

Being active within nature is also often incidental to nature-based activities. For example, individuals may take part in gardening or conservation activities in order to engage with nature and socialise, but these activities will also involve physical activity (Pretty et al., 2005; Pretty et al., 2007; Barton et al., 2011; Thompson-Coon et al., 2011). Given the challenge of meeting the 30 minutes, five times a week exercise recommendation and the difficulties that many people face sticking to an exercise regime, green exercise may be a more viable and appealing option for maintaining long term activity levels in adults and children, as often the opportunities for social interaction and contact with nature are the main motivation rather than the exercise itself (Pretty et al., 2007; Barton et al., 2011).

Some people also use natural environments for the direct purpose of engaging in physical activity. Natural environments can provide an environmental setting for activity or an exercise programme (Bowler et al., 2010) for example orienteering, green gym activities and cross-country running. It is suggested that people are attracted to taking exercise in greenspaces due to the psychological restoration they experience within them (Hartig, 2008; Bowler et al., 2010). Furthermore, evidence suggests that young people engage in more physical activity in a natural environment compared to a built environment, even when engaging in comparable activities (Wood et al., 2014). Increased participant adherence levels has sometimes been observed (and often implied) in nature-based interventions (Hug, 2008; Focht, 2009; Thompson Coon et al., 2011; Bragg et al., 2013a; Iancu et al., 2013b) together with the lower perceived exertion of physical activity in natural surroundings (LaCaille et al., 2004; Thompson Coon et al., 2011; Reed et al., 2013; Gladwell et al., 2013). Natural environments can be used to encourage people to take part in physical activity and to gain the associated health and wellbeing benefits.

3.3.3 Take notice - Nature and mindfulness

Taking notice of the natural environment can provide important benefits for wellbeing (Mitchell and Popham, 2008; Hine et al., 2011). Viewing nature from a window can increase recovery from mental

fatigue (Kaplan, 1992; Maller et al., 2006), reduce stress (Maller et al., 2006; Kaplan and Kaplan, 1989), enhance recovery from illness (Diette et al., 2003) and improve concentration and mood (Maller et al., 2002). Taking notice of nearby nature can also increase recovery from stress, protecting individuals from further incidences of stress and improving concentration (Maller et al., 2002). In health care settings taking notice of nature through the use of a garden can help patients to relax, improve the ability to cope with illness, reduce stress and improve mood (Cooper-Marcus and Barnes, 1995; Whitehouse et al., 2001; Ulrich, 2002).

Mindfulness is said to aid wellbeing by enhancing self-understanding, reducing stress and improving mental health (Feldman et al., 2007; Nef, 2008; Williams, 2010; Hofmann et al., 2010; Chu, 2010; Keng et al., 2011; Howell et al., 2011). Taking notice of nature can foster mindfulness (Nisbet et al., 2009; Markowitz et al., 2012; Wolsko and Linberg, 2013), with research suggesting that being in a natural environment and connecting with nature is associated with increased awareness of experience, which is considered to be an extension of attention restoration (Nisbet et al., 2009; Markowitz et al., 2012; Wolsko and Linberg, 2013). Individuals who are connected to nature also display greater levels of mindfulness, which is shown to be associated with increased wellbeing (Brown and Kasser, 2005; Wolsko and Linberg, 2013).

3.3.4 Keep Learning - Learning through nature

Natural environments can provide opportunities for learning. Engaging in nature-based activities can help people to learn about nature and develop ecological knowledge; whilst also developing social and physical skills (NEA, 2011). For example, joining an allotment project would help participants to learn about food growing and planting, whilst joining a green exercise group could help participants to interact with others (Wood et al., 2013). This learning is not always the aim of the activity, but can provide a number of benefits for wellbeing such as increased self-esteem and resilience, a sense of purpose and hope, a feeling of competency and can often act as a distractor from stressful life events, fostering coping skills (Feinstein and Hammond, 2004; Hammond, 2004; Wood et al., 2013).

In addition, the natural environment can also be used as a learning tool. In schools with environmentally focused curriculums attainment is 72% greater, with outdoor learning experiences allowing children to develop cognitive skills more effectively than classroom based learning (Dillon et al., 2006). Learning in nature also benefits social skills, improves self-esteem and enhances social, personal and emotional development (Kings College, 2011). It can also impact upon long term memory, increase knowledge and understanding, educational attainment, behaviour and attitude to others. The natural environment adds value to everyday experiences in the classroom, allows children to achieve more and develop more effectively, thus promoting greater wellbeing (Kings College, 2011).



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3.3.5 Give - Nature, volunteering and giving to others

Volunteering in any sense can help people experiencing difficulties in their lives to get back on their feet and become integrated in the community, resulting in improved wellbeing. However volunteering in natural environments provides a greater number of benefits for wellbeing as participants receive high levels of satisfaction from nature-based activities and experience personal autonomy (O'Brien et al., 2008, 2011). Volunteering in nature creates social capital and reduces social isolation by connecting individuals to communities and allowing them to meet other people. Environmental volunteering also increases confidence, self-esteem and pride, facilitates skill development, provides opportunities for self-discovery and helps participants to develop a 'sense of place' and 'sense of self' (O'Brien et al., 2008, 2011; Husk et al., 2013). Through volunteering in nature, individuals are also offered an opportunity to become an active member of their local community by improving local green spaces. Furthermore, frequency of volunteering in natural spaces is associated with delayed mortality (O'Brien et al., 2008, 2011); suggesting its importance for wellbeing.

In addition, spending time in natural environments encourages generosity. When people are in contact with nature they focus on others more (Weinstein et al., 2009), often develop close and satisfying relationships with others and are encouraged to act positively for the larger social community. These actions stimulate a sense of vitality and positive effect and can ameliorate the experience of depression and physical illness (Weinstein et al., 2009). Through nature-based activities

individuals also often 'give to others', for example working on a community allotment which provides food for the community, building a community natural area or helping others to achieve goals through a shared group. Together with environmental volunteering, nature-based activities can encourage 'giving to others' and through this, health and wellbeing can be enhanced.

3.3.6 Key findings: Nature and the Five Ways to Wellbeing

In conclusion, both initiatives for the general population that increases contact to nature and nature-based interventions for vulnerable groups, result in participants:

Being more *Active* by taking part in exercise and activities in natural environments, gaining physical and mental health benefits;

Being Connected both with nature and with other people, thus increasing social inclusion;

Taking Notice of nature and the green environment around them and gaining the associated mental health benefits and increased connectedness to nature;

Keep Learning, by developing new skills and learning about themselves; and

Being able to *Give*, through sharing and supporting each other and working as a team, by volunteering their time and also by giving back to nature through shaping and restoring natural environments.

4. Nature and wellbeing: Implications for policy and practice

In this chapter, the growing recognition of the role that nature plays on wellbeing and nature is outlined, before the policy implications are divided into those for: i) public health, and health and social care commissioning and ii) environmental conservation and urban planning. In the health section, an overview of how nature can help to tackle current health issues and inequalities is given, followed by details of the policy background. Finally, recommendations for this sector are given. Similarly in the environmental conservation and urban planning section, the policy background is outlined before recommendations are given.

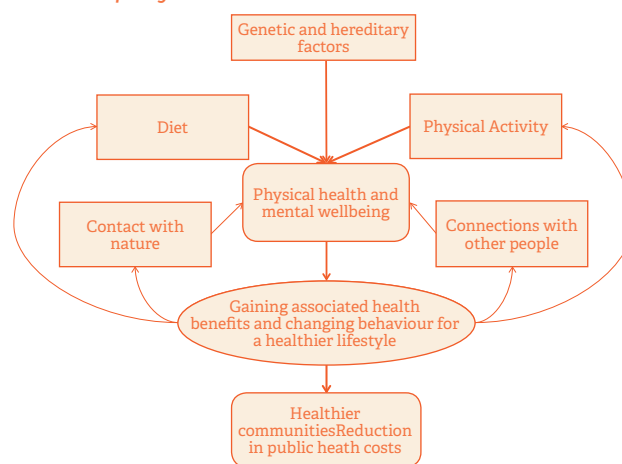
4.1 Growing recognition of the influence of nature on wellbeing

Although diet and physical activity (together with inherited factors), are the main influences on human health, evidence from published literature and subsequent definitions of wellbeing have shown the importance that both contact with nature and social interaction have for improved health and wellbeing. The wellbeing benefits, the increased physical activity (often as an incidental outcome) together with the increased adherence to nature-based initiatives (thought to be due to the emphasis on being part of a group), are likely to raise the total health dividend of these initiatives still further. This will in turn increase the likelihood of participants returning to the activities time after time and ultimately adopting healthier behaviours, an important consideration for individual, community and public health (Figure 2).

There has undoubtedly been progress in raising the awareness of this relationship, and it is now widely accepted that ecosystem services can also include health and wellbeing benefits. Given the challenges facing society, nature can act as an essential health resource; and given the impacts of ill health both on the individual, and on the costs incurred in the provision of care, access to nature and greenspace is vital. Public bodies, government departments, voluntary organisations, and the media are becoming more interested in the health and wellbeing benefits from the natural environment and as a result, many are actively promoting the importance of green exercise and contact with nature for all.

The increasing body of evidence outlined in this review supports the effectiveness of natural environments in promoting health and wellbeing and therefore has important implications for a wide range of sectors including public health, health and social care, environmental conservation and management, and urban design (Bragg, Wood and Barton, 2013).

Figure 2. Influencing factors on health and wellbeing and their relationship to behaviour change and healthier lifestyles.



Source: Bragg, 2014 (Adapted from Barton, 2008).

4.2 Implications for public health and health and social care

Since the concept of green exercise was first introduced (Pretty et al., 2003), the term has been adopted and promoted by organisations such as NHS Health Scotland, Health Alliance Scotland, Scottish Natural Heritage, Public Health Wales and Natural England. However, although there has been an increasing appreciation that nature can be a valuable health resource, the wellbeing value of nature has not yet featured highly in policy, despite the fact that several NHS organisations advocate green exercise for many different groups of society.

4.2.1 Nature and current wellbeing challenges

Physical inactivity and obesity

Physical inactivity is the fourth highest cause of disease and disability in the UK (Murray et al., 2013; PHE, 2014a) and generates health costs of an estimated £7.4 billion a year (Ossa and Hutton, 2002; Scarborough et al., 2011). As highlighted in section 3.2.2, natural environments can play a key role in increasing physical activity levels. Areas with more greenspace have more active populations; taking part in nature-based initiatives increases incidental activity levels; and active participation in activities within nature, increases physical fitness. Evidence from the Monitor of Engagement with the Natural Environment (MENE)

data (NE, 2013) illustrates a relationship between the frequency of visits to the natural environment and overall levels of physical activity. Approximately half (52%) of those people who visit the natural environment at least once a week take part in 30 minutes or more of physical activity on three or more days per week compared to 34% of infrequent visitors and 21% of non-visitors (NE, 2013). Nature can therefore play an important part in tackling the problem of physical inactivity in the UK population.

Nature-based initiatives and interventions have also been shown to be an enjoyable pastime for many, causing people to return time after time, thus increasing adherence levels. Many projects also involve food growing and food and nutrition education as part of the activities in nature. With the additional challenge of tackling the rise in obesity levels in the UK, these factors, combined with the associated increase in physical activity, suggest that nature-based initiatives may also be part of the solution to reducing obesity in the UK.

Mental ill health, dementia and isolation

The evidence in this review highlights the links between nature and mental health and wellbeing. For instance, reduction in stress, increases in attention restoration and self-esteem have been recorded. Sections 3.2.1 and 3.2.3 have highlighted the ways in which nature can help people to become both connected with nature and with other people (thus increasing social inclusion), and to gain the mental health benefits of mindfulness in nature – all important to our mental health. Nature-based initiatives can therefore help to enhance the population's mental health.

Many environmental volunteers are aged in their 50s and 60s, and for this age group, it is recommended that light activity, social engagement and keeping the mind busy are three of the six pillars of a brain-healthy lifestyle, said to delay the onset of Alzheimer's (Laurin et al., 2001; Middleton and Yaffe, 2010; Barnes and Yaffe, 2011; Vickland et al., 2012). Individuals who volunteer with organisations such as The Wildlife Trusts, TCV, RSPB and The National Trust can benefit from these three pillars. It could be argued that either incidentally or by design, nature-based initiatives that include conservation volunteering, are working towards delaying the onset of dementia, as taking part in conservation volunteering as a group, learning new skills and undertaking light exercise are core aspects of conservation volunteering.

4.2.2 Nature and health inequalities

There is evidence that access to green space is associated with a range of better health outcomes. The research has shown that income-related inequality in health is often mitigated where people have access to greenspace (Mitchell and Popham, 2008; Balfour and Allen, 2014). However as illustrated in Chapter 2, accessibility to natural greenspaces is not equally distributed over the UK and as a result some of the poorest most deprived communities have the least opportunity to have contact with nature (Balfour and Allen, 2014; Allen and Balfour, 2014).

In order to illustrate the importance of nature in tackling health inequalities, Public Health England, Natural England and UCL's Institute of Health Equity have recently produced two reports⁴ that: i) highlight where the natural environment already helps to reduce health inequalities; and ii) outline steps to ensure that nature can be used further as part of the solution in tackling health inequalities. This review does not seek to duplicate this work but rather gives an overview of the priorities for action found in these reports.

In the '*Natural solutions for tackling health inequalities*' report it is suggested that "*interventions using the natural environment to improve health can deliver costs savings for health and related services and improve physical and mental health outcomes*" (p. 5, Allen and Balfour, 2014). The four main priorities listed in this report are to:

- Improve co-ordination and integration of the delivery of health outcomes and ensure nature-based interventions are user-led
- Build a stronger evidence base to ensure nature-based programmes are evidence-led
- Ensure sustainable delivery of services that use the natural environment, and
- Increase the quality, quantity and use of natural environment spaces that benefit people's health and help prevent ill health.

Furthermore, the '*Local Action on health inequalities: Improving access to green spaces*' report states that "*increasing the amount and quality of green space can be part of a low cost package to address health inequalities, improve health outcomes and deliver other benefits*" and suggests that "*increasing the use of good quality green space for all social groups is likely to improve health outcomes and reduce health inequalities*", in addition to facilitating greater community cohesion and less social isolation (p. 4, Balfour and Allen, 2014).

4.2.3 Policy background

Since April 2013, public health specialists from more than 70 organisations have been brought together into a single public health service under the newly formed Public Health England (PHE) (PHE, 2014b). PHE set out the strategic priorities for public health but much of the responsibility for implementing public health has now been passed to Local Authorities⁵ (LAs).

LAs are also responsible for social care in England, and social care too has seen changes in recent years. The most significant development in this sector has been the availability and increased uptake of personal budgets (Bennett and Stockton, 2012). Since 2007, those with complex care needs, eligible for social care can elect to be given a budget based on their personal

4 Local action on health inequalities: Improving access to green spaces (PHE) https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/357411/Review8_Green_spaces_health_inequalities.pdf and Natural Solutions for tackling health inequalities (NE) <http://www.instituteofhealthequity.org/projects/natural-solutions-to-tackling-health-inequalities>

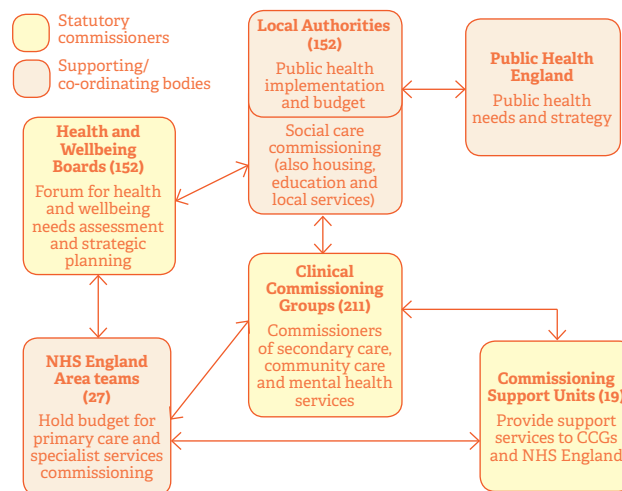
5 County Councils and Unitary authorities

requirements. The individual can then manage their own budget (either directly or by LAs on their behalf) in order to choose the format of their care and support. Figures from March 2014 suggest that nearly 650,000 people have taken up a personalised budget although the majority are still having their budget managed on their behalf by the LAs (Bennett, 2014). That said, evaluations of personalisation in social care concluded that this is a cost-effective approach, which offers the service user more choice and control over their care (The Audit Commission, 2010, 2011; Ipsos Mori, 2011). The Care Act 2014, intends to roll out personal budgets to include all those eligible for healthcare services through Integrated Personal Commissioning so that health and social care funding is centred around the individual (Bennett, 2014).

Historically, social care has been the domain of LAs and primary healthcare service commissioning the role of NHS Primary Care Trusts, both acting as separate entities with limited collaboration and communication between them. Whilst social services commissioning has remained the responsibility of LAs, secondary and community healthcare services commissioning is now the responsibility of newly formed clinically-led organisations called Clinical Commissioning Groups (CCGs). CCGs are set up on a regional county level and all GP practices are legally required to be part of a CCG (Naylor et al., 2013). GP services are in turn commissioned by NHS England (who are responsible for primary and specialist care commissioning) and their 27 area teams support the CCGs and hold them to account (Naylor et al., 2013).

In addition, as part of the Health and Social Care Act (2012), a network of regional Health and Wellbeing Boards (HWBs) has been established in England, organised by Local Authorities. The role of these HWBs is to improve health, mental health and social care provision and delivery by facilitating partnership between the CCGs and LAs and thus increasing the integration between the two services (Local Government Association, 2014). By conducting a joint health and social care needs assessment of their area population and subsequently developing a health and wellbeing strategy, the aim is to encourage coherent, joined-up and more effective commissioning (Allen and Balfour, 2014). HWBs therefore consist of strategic commissioners of both health and social care from CCGs and LAs respectively. Details of the links between the various health and social care organisations in England are shown in Figure 3.

Figure 3. The new health and social care commissioning system in England



Source: Adapted from Naylor et al., 2013b.

The case outlined in Figure 3 is for England only, as the structures and mechanisms for health and social care commissioning in Scotland, Wales and Northern Ireland are different. More details of the health and commissioning systems in the devolved nations can be found in the paper for The Kings Fund developed by Ham et al. (2013). This report does not detail the situation in each country but an overview (taken from Ham et al., 2013) is provided below:

- Northern Ireland has integrated health and social care commissioning structures since 1973. Health and social care commissioning is the concern of the Health and Social Care Board, and five large health and social care trusts responsible for the delivery of primary, secondary and community health care; and public health is the realm of the Public Health Agency.
- Scotland is also working towards more integration between health and social care. Social care is commissioned by LAs, Territorial NHS Boards handle primary and community health care through the Community Health Partnerships.
- In Wales LAs are responsible for social care commissioning, Local Health Boards commission primary, secondary and community healthcare services and public health is the responsibility of three NHS Trusts.

4.2.4 Opportunities for Local Authorities

Individuals exist within a wider global system comprising: the natural and built environments; everyday activities (working, shopping, playing and learning etc.); the local economy (wealth creation and markets); the community (social capital and networks) and lifestyle, all of which are determinants of our health and wellbeing.

For Local Authorities particularly, the new policy environment has provided a number of reasons why promoting all aspects of wellbeing, including good health, social networks and local economies, has become increasingly important. Improving wellbeing is part of The Big Society agenda (The Cabinet Office,



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2010), LAs are now responsible for implementing Public Health policy, setting strategic health and wellbeing requirements through HWBs and must also integrate social care commissioning with healthcare in CCGs (Barton and Grant, 2006; Local Government Improvement and Development, 2010).

LAs are also responsible for a wide range of other services that impact on the everyday lives of individuals, their communities and the physical environment, services such as housing, urban planning, health and safety at work, transport, parks, education and leisure to name but a few. The opportunity for LAs to integrate wellbeing enhancement into multiple aspects of their work is therefore considerable. Given the positive influence on wellbeing from both viewing and contact with nature, LAs could further facilitate this improvement of their communities' wellbeing by conserving and creating local natural spaces, and by encouraging local people to access nature.

4.2.5 Recommendations

Based on the review of the literature relating to the wellbeing benefits derived from nature, the following 12 recommendations for public health and health and social care commissioning are made:

Public Health - initiatives for the general population

- **Increasing access to a wide range of nature based activities within society will provide benefits to public health and provide savings to the UK economy.** Healthy, active people who have high levels of social contact will lead to a better overall health and reduced costs for the NHS and public health bodies.
- **Agencies responsible for providing health and social care services and promoting social contact would also benefit from recognising the importance**

of nature-based activities for increasing health and wellbeing within communities. Nature-based activities reduce social isolation and help to integrate people into society, something that is relevant to priorities set by both strategic health and public health commissioners.

- Contact with nature has been shown to improve mental wellbeing, even after as little as five minutes of contact with nature (Barton and Pretty, 2010; Bragg, Wood and Barton, 2013; Bragg, 2014). **Thus encouraging people to incorporate more green exercise and nature contact into daily routines has the potential to increase wellbeing for health promotion at the population level,** particularly for those at risk of certain types of illness.
- **Public health bodies and Health and Wellbeing Boards (and the equivalent organisations in Scotland, Northern Ireland and Wales) are urged to focus on increasing the amount, quality and use of natural places in order to improve community health outcomes and reduce health inequalities**
- Public health bodies and Health and Wellbeing Boards (or the equivalent organisations in Scotland, Northern Ireland and Wales) will have prioritised particular health issues which need addressing in their region, such as obesity, mental ill-health, dementia or physical inactivity for example, and will also have identified which needs they are currently most and least successful at addressing. **Managers of nature-based interventions are encouraged therefore to target their bids to commissioners with the issues and needs of the particular region in mind, in order to show where a natural intervention may be more effective and appropriate.**

Health and social care - interventions for the vulnerable:

- Contact with nature provides a number of positive health outcomes. However, there remains a lack of knowledge and acceptance among GPs and social care commissioners of the benefits to patients gained from nature-based interventions as an additional or alternative treatment for mental and physical ill health. **Commissioners of health and social care services need to be encouraged to take the idea of nature-based interventions more seriously and GPs and other clinicians should be encouraged to consider and recognise the importance of 'Green Prescriptions'.**
- **The National Institute of Clinical Excellence (NICE) should also be called upon to recommend the use of nature-based interventions alongside other treatment options** - for mental illnesses such as depression, for example. A NICE recommendation will help to increase the legitimacy of nature-based interventions and make it easier for GPs to prescribe and patients to receive the treatment.
- The debate regarding **nature-based interventions** is not whether they are more effective than traditional treatment options but rather that they **represent another treatment choice for GPs, social care commissioners and service users.** Different treatments or interventions suit different people and what works for one person may not work for another. Furthermore, people often benefit from a combination of approaches. Thus, the addition of another tool to tackle health and wellbeing problems is especially important given the challenge of tackling current health issues such as mental ill-health, obesity and declining physical activity.
- **Health and social commissioning services should consider that nature-based activities are an enjoyable, socially acceptable treatment option and that the observed effect on attendance and adherence levels could prove to be effective in encouraging uptake or treatment.**
- In light of recent changes to health and social care referral systems, in order to facilitate a greater integration of needs and services, **organisations such as Clinical Commissioning Groups (and their equivalents in the devolved nations) need to ensure that nature-based interventions are incorporated into the regional lists of services and interventions available for commissioning.**
- Similarly, in light of the recent changes to CCGs and HWBs, **managers of nature-based interventions should be proactive in: i) promoting how nature-based interventions have multiple outcomes and are so are particularly suited to integrated health and social care; and ii) ensuring that their programmes are included in the lists of services and interventions available for commissioning.**
- There is also a need to raise service users' awareness of nature-based interventions and for them to understand that they are a valid and effective

treatment option for a variety of different vulnerable groups. A concern in encouraging more 'green prescriptions' for nature-based health interventions is to overcome patients perception that it is not an effective treatment response. **Education is needed for GPs, social care teams and service users to highlight the additional health and wellbeing benefits that nature-based interventions can provide that traditional or other approaches do not.**

4.3 Implications for environmental conservation and urban planning

4.3.1 Policy background

Land managers and environmental conservation organisations have quickly seized on the opportunity to promote health and wellbeing benefits of nature, as another reason to conserve natural places. Urban planning policy on the other hand does not yet consider the inclusion of natural greenspaces as essential in urban design for promoting wellbeing and for enabling harmonious and healthy communities.

There appears to be an inconsistency between the positive wellbeing outcomes of green exercise and the existing drivers of economic development. With worries over a shrinking economy, increases in unemployment and the number of people living in poverty there has been a call to increase building, to employ more construction workers and more houses in order to revive the economy. However there is a danger that these actions will sacrifice a valuable health resource as green spaces are often removed to build houses, reduce maintenance costs and criminal activity. Building on green spaces also has serious implications for health and social inequalities as a lack of green space in residential areas corresponds with poor wellbeing, reduced physical activity and low socio-economic status. Additional nature facilities in the poorest areas may therefore be beneficial (see section 4.2.2).

The importance of natural environments for health and wellbeing has important implications for those responsible for managing and promoting natural spaces. The importance of green spaces to the nation's health is largely underestimated by policy makers and the general public, yet there are multiple health outcomes resulting from nature contact. Furthermore, urban nature provides a number of benefits for health and wellbeing, thus highlighting the importance of green spaces within communities. For all of us to have access to nature there is a need for more quality green spaces and the protection and conservation of our existing green spaces in both rural and urban locations.

Local Nature Partnerships (LNPs) were set up in England as part of the Natural Environment White Paper (2011) in order that local areas could work in a joined up and strategic way to help manage the natural environment for multiple benefits simultaneously for people, the economy and the environment (Defra, 2012). There are 48 LNPs in England and they comprise partnerships of a broad range of local organisations, businesses and people who aim to help bring about



Thurrock Thameside Nature Park © Matthew Roberts

improvements in their local natural environment (Defra, 2012). The idea is for LNPs to make sure that within the local decision-making process that the region's nature and the value of the services it provides to the economy and the people who live there, is taken into account. This means that in planning and development for example, the impact on local nature and the health and wellbeing of the local people should be as much of a consideration as the impact on local economic growth⁶.

4.3.2 Recommendations

Based on the review of the literature relating to the wellbeing benefits derived from nature, the following 7 recommendations for environmental conservation, land management and urban planning are made:

- The National Planning Policy Framework (Department for Communities and Local Government, 2012) states that local planning authorities in England have a duty to take account of and support local strategies to improve health, social and cultural wellbeing. **Directors of Public Health should therefore use their roles to work with departments across local authorities to ensure health considerations are at the heart of planning decisions, particularly those regarding natural spaces.**
- **LNPs should** also be encouraged to further recognise the wellbeing benefits of contact with nature and to act to **ensure that urban and rural green spaces are preserved for the benefit of the nation, with planners / developers working to enhance green infrastructure and to encourage public access.**
- **Conservation organisations such as The Wildlife Trusts, should focus on the obligation for LNPs, HWBs, Directors of public health and planners to consider community wellbeing and to suggest a possible solution by highlighting the direct links between access to nature and community health and wellbeing,** in order to effectively promote the importance of conserving greenspaces in urban and rural areas and promoting good access to nature.
- Many health organisations are using the Five Ways to Wellbeing as a framework to encourage individuals to enhance their wellbeing and **in order to secure funding. Nature-based interventions are also encouraged to draw on the evidence provided in this review, to highlight the multiple outcomes of such initiatives and their relevance to the Five Ways to Wellbeing.**
- **Environmental organisations who provide opportunities to access nature or nature based interventions for vulnerable groups should frame their outcomes to align with the health and wellbeing needs of their locality,** as identified by PHE and HWBs in order to facilitate public health and health and social care commissioning.

⁶ Note: This section refers to the context in England, however key messages are likely to be transferable to the equivalent bodies in Wales (e.g. The Wales Biodiversity Partnership), Scotland and Northern Ireland

- There is likely to be a marked increase in individuals holding a personal budget with the implementation of the Care Act 2014, therefore **providers of nature-based interventions for the vulnerable should recognise the need for targeted advertising of the benefits of their service to potential service users on personalised budgets.**
- Conservation organisations such as The Wildlife Trusts have contact with large numbers of people through managing their nature reserves, organising events and running a variety of initiatives, not to mention contact with thousands of Wildlife Trust members. **The Wildlife Trusts should therefore be encouraged to promote the health and wellbeing benefits of contact with nature more widely to members and non-members alike, to help to raise awareness and to increase nature contact within the UK population.**

5. Conclusions

Overall there is a large body of evidence (including several comprehensive reviews) to suggest that contact with a wide range of natural environments, in a variety of contexts, can provide benefits for health and wellbeing. These health and wellbeing benefits from nature include improvements to physical health (through increased physical activity); and improvements to psychological and social wellbeing, in a number of ways, including: reductions in stress and anxiety, increased positive mood, self-esteem and resilience, and improvements in social functioning and social inclusion. This review shows that these benefits to wellbeing are demonstrated not only through contact with nature and participation in nature-based activities, but also through simply viewing natural scenes.

Literature regarding the health and wellbeing benefits of natural environments rich in nature has been given less attention however, with currently only a limited reference to the 'quality' or to the level of biodiversity of the natural environment in the evidence base, or to the specific benefits of such nature-rich environments. Nevertheless, environments rich in wildlife are similarly associated with improved wellbeing, through emotional, social and psychological benefits such as improvements in self-esteem and mood. In a recent systematic review of the literature in this field, Lovell et al. (2014) also found evidence to suggest that biodiverse natural environments are associated with good health and wellbeing with improvements ranging from better mental health outcomes, to associations with increased healthy behaviours. Although smaller than the evidence base for nature and health in the general sense, the existing 'weight of evidence' for natural environments rich in wildlife suggests potential for added value and scope for further research.

Inevitably there are some opportunities for future research regarding the health benefits of contact with nature. There is a need for more UK-based research, with studies based on larger sample sizes, standardised outcome measures and with a long term follow-up. Comparison studies between nature-based interventions with traditional (or other available) health and social care interventions should be conducted, together with cost-benefit analyses to demonstrate the potential savings to the UK of using nature-based interventions for certain health problems and groups.

Several major health and wellbeing issues face the UK (both at an individual and population level) including physical inactivity; the increase in obesity; growing mental ill health, dementia and social isolation; and continuing health inequalities. These issues have created real challenges for policy makers, public health and for statutory, voluntary and private sector organisations responsible for providing health and social care services. In addition, the pressure on natural places in the UK is ever growing, the need for housing and economic opportunities is continually rising and inevitably, development is likely to put greenspaces at risk. However this review has highlighted the multiple wellbeing and social inclusion outcomes that come from contact with nature, and has demonstrated why

nature is vital to the health and wellbeing of people in local communities and therefore should be preserved.

Initiatives that increase contact to nature (and nature-based interventions for vulnerable groups) result in participants improving wellbeing by: being more *Active* by taking part in exercise and activities in natural environments, gaining physical and mental health benefits; *being Connected* with other people, thus increasing social inclusion; *taking Notice* of nature and the green environment around them and gaining the associated mental health benefits and increased connectedness to nature; *Learning*, by developing new skills and learning about themselves; and being able to *Give*, through sharing and supporting each other and working as a team, by volunteering their time and also by giving back to nature through shaping and restoring natural environments.

In current times where there are real concerns about the burgeoning costs of maintaining good public health and tackling health inequalities, combined with the drive for integration in health and social care services, the multiple outcomes gained from nature-based initiatives present a possible solution. The need for access to good quality nature has important policy implications for a wide range of sectors, including public health, mental health and social care, social inclusion, the management of natural places and urban planning.

Increasing access to a wide range of nature-based activities within society will provide benefits to public health and provide savings to the UK economy. Nature-based activities reduce social isolation and help to integrate people into society, something that is relevant to priorities set by strategic health commissioners. Public health bodies and HWBs (and the equivalent organisations in Scotland, Northern Ireland and Wales) would benefit from focussing on increasing the amount, quality and use of natural places in order to improve community health outcomes and to reduce health inequalities.

Nature-based interventions also represent another treatment choice for GPs, social care commissioners and service users. Different treatments or interventions suit different people and what works for one person may not work for another. The addition of another tool in the toolbox to tackle health and

wellbeing problems is especially important given the challenge of tackling current health issues. In light of the recent changes to health and social care referral systems, in order to facilitate a greater integration of needs and services, organisations such as Clinical Commissioning Groups (and their equivalents in the devolved nations) should take advantage of the multiple wellbeing outcomes from nature-based interventions and ensure that they are incorporated into the regional lists of services available for commissioning. Similarly, managers of nature-based interventions should be proactive in promoting how their interventions are particularly suited to integrated health and social care.

The importance of natural environments for wellbeing also has important implications for those responsible for managing and promoting natural spaces. The importance of green spaces to the nation's health is largely underestimated by policy makers and the general public, even though there are multiple health outcomes resulting from nature contact. Local Nature Partnerships therefore need to further recognise the wellbeing benefits of contact with nature and act to ensure that urban and rural green spaces are preserved for the benefit of the nation, with planners and developers working to enhance green infrastructure and to encourage public access. Conservation organisations such as The Wildlife Trusts should focus on the obligation for LNPs, HWBs, Directors of public health and planners to consider community wellbeing and to suggest a possible solution by highlighting the direct links between access to nature and community health and wellbeing. In so doing, they will be effectively promoting the importance of conserving greenspaces in urban and rural areas and facilitating better access to nature.

In conclusion, the significant improvements to wellbeing found as a result of contact with nature in this review have implications for not only the wellbeing and resilience of individuals but also for public health of communities and the management of natural environments. Could one answer to improving both the nation's health and natural places simultaneously be to encourage people to become more active outdoors and interact with nature? It is hoped that this report will give individual Wildlife Trusts (and other interested parties) an easily accessible and up-to-date insight into the scientific evidence for nature's potential to improve wellbeing and use it to convince funders of public health and of health and social care that nature can be a valuable health resource and so should be preserved.



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6. Appendix A. Gaps in the nature and health evidence base and methodological issues

Limited UK research

The majority of research concerning the health and wellbeing benefits of contact with nature has originated from the US, Scandinavia, the Netherlands and Japan (Bragg, 2014). Whilst research into the health benefits of green exercise for the general population and the therapeutic use of nature-based interventions for vulnerable groups has increased in the UK in the last ten years, more comparative data from the UK is required to explore the wellbeing benefits of contact with natural environments (Bragg, 2014). This research will expand the evidence base and provide direct evidence as to the benefits of natural environments within the UK.

Lack of longitudinal data

Another issue is that research to date also generally lacks longitudinal data, as many studies do not administer follow-up measures to analyse the effects of long term participation in nature-based activities (Bragg, Wood and Barton, 2013; Bragg, 2014). Furthermore, the literature has not addressed the ideas of exposure time and sustainability. Whilst research has demonstrated that as little as five minutes of contact with nature can provide benefits for health (Barton and Pretty, 2010), little is known regarding whether this leads to longer term improvements and how long the benefits last once participants enter a more stressful environment. Research therefore needs to be conducted to determine how long changes last for, whether contact with nature contributes to long term changes in behaviour or thinking and whether all of this leads to healthier communities, enhanced public health and preservation of natural areas (Bragg, 2014).

Methodological issues

Much of the literature examining the health benefits of contact with nature also suffers from methodological flaws (Bragg, Wood and Barton, 2013; Bragg, 2014). The methodologies currently used do not meet the existing standards for medical evidence as there are a number of key problems. Firstly many studies do not use standardised, validated and reliable measures for health and wellbeing, limiting the ability of other researchers to replicate methodologies and research findings. Studies also lack control groups to which the results of intervention groups can be compared, do not blind participants to which type of research group they are in, do not randomly allocate participants to particular intervention groups, or use random sampling techniques to select participants. Sample sizes also tend to be small, limiting the power of the statistical analysis and application of findings (Bragg, Wood and Barton, 2013; Bragg, 2014). Randomised controlled trials (RCT) are considered the gold standard methodology in healthcare as they involve blinding, randomisation and the comparison of two treatments/interventions under conditions that remove bias from both the selection of participants and measurement of outcomes (Sempik, 2007; Bragg, 2014). Thus, future research into the health benefits of contact

with natural environments should seek to conduct randomised controlled trials. However researchers and practitioners argue that evaluations of nature-based interventions may find it difficult to live up to RCT standards, due to the fact that RCT were developed to test treatments such as drugs or a surgical intervention and nature-based interventions do not involve the application of such a discrete or defined 'treatment' (Bragg, Wood and Barton, 2013; Bragg, 2014).

Evidence for wellbeing benefits from natural environments rich in wildlife.

As with the more general nature and health evidence base, both the definition and the measurement of complex multifaceted concepts of 'wellbeing', 'health' and 'biodiversity' differ between the studies, resulting in heterogeneity not only of design but also of methods and measurement. In addition many of the studies were observational, effects were not compared using a 'control' condition and the numbers of studies were small.

Future research needs

Different types of nature-based interventions need to be compared amongst a variety of different cohorts. These nature-based interventions also need to compare different types of experiences and activities, different natural elements and levels of engagement with nature. Furthermore, the effects of nature-based interventions for the vulnerable need to be compared with traditional treatment options, as this will provide additional credibility for the use of nature in influencing health (Bragg, Wood and Barton, 2013; Bragg, 2014).

Cost-benefit analysis studies also need to be conducted, as this will inform the Government and Health sectors not only of the potential of nature-based interventions to act as a treatment for certain types of illness, or for general public health, but also how much money the use of these initiatives will save the UK economy. This evidence also needs to be published in the mainstream public health and health and social care literature, so that it provides the greatest opportunity to influence policy (Bragg, Wood and Barton, 2013; Bragg, 2014).



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Appendix T

Dear Sir/Madam;

Variance for 49B 9 Planning Application for Three Houses in North Side

We are proposing to build three houses on a property (49B 9) in North Side that is currently zoned Neighbourhood Commercial (NC). As per Section 13 (9) of the Development and Planning Regulations, residential building is allowed but not on the ground floor of a parcel zoned neighbourhood commercial. Please consider this request for a variance for three proposed houses given the following points:

1. Section 8(13)(b)(i) states that the Authority may grant a variance if *“the characteristics of the proposed development are consistent with the character of the surrounding area”*.

Within the 300’ radius of parcel 49B 9, there are 8 properties on the seaside, and 12 properties across the road on Rum Point Drive (see attached Buffer Map). Of the seaside properties, the 4 to the west, including the adjacent parcel, are all zoned Medium Density Residential (MDR). All 11 parcels on the south side of Rum Point Drive and west of Hutland Road are zoned MDR, with the 1 parcel on the south side of Rum Point Drive and east of Hutland Road being NC. Looking eastward on the north side of Rum Point Drive from the proposed development to Chisholm’s Grocery (49B 13), there are 3 parcels which are all NC. Parcel 49B 10 is a narrow strip approximately 6’ wide and is ineligible for development in any form. The next parcel, 49B 152, is vacant land. The third seaside parcel 49B 153 zoned NC contains a ground floor residential duplex. The proposed development of three residences is therefore entirely *“consistent with the character of the surrounding area”*.

2. Section 8(13)(b)(iii) states that the Authority may grant a variance if *“the proposal will not be materially detrimental to persons residing or working in the vicinity, to the adjacent property, to the neighbourhood, or to the public welfare”*.

In our view, the parcel to the west (49B 134) adjacent to the proposal, which is MDR, would suffer materially if we were to build commercial buildings rather than the proposed houses, as this property would lose value due to being adjacent to commercial structures.

Given the existing commercial businesses in the immediate neighbourhood – namely, Chisholm’s Grocery and J & A Grocery – this predominantly residential neighbourhood is more than well served by commercial enterprises. This is evidenced by the steady number of failed businesses here in the past four years: a hair salon, auto repair shop, jerk stand, gift shop, fruit stand. More commercial businesses would overwhelm this small residential community, and likely threaten the well-being of those currently in operation. In summary, additional commercial development on 49B 9 would be a serious detriment to the aesthetical and material value of this seaside community in North Side.

In the event of a storm surge, all buildings are proposed to be built greater than 13’ above sea level, on the natural ridge, and are setback 75’ from the HWM on the ground floor. It is estimated that 50% of the parcel’s shoreline is ironshore that would help protect from a storm surge. The shoreline has mature natural vegetation that will dampen the effect of any coastal winds and storm surge. Therefore, the requested variance will not cause any detrimental effects to those in the neighbourhood in the event of a storm.

3. As required by Section 8(13)(d), notification letters regarding this variance request have been sent out to all property owners within a 300’ radius of the proposed development.

We respectfully request a setback variance for three proposed inground septic tanks located 12’ from the road where a 20’ setback is required. Given that the tanks are completely underground, this setback variance is not *“materially detrimental to persons residing or working in the vicinity, to the adjacent property, to the neighborhood, or to the public welfare”* as required by Section 8(13)(b)(iii). Also note that notification letters have been sent out to adjoining property owners regarding this setback variance as required by Section 8(13)(d).

If you have any questions or comments, please contact me at 938-3828 or Robert@rjda.ky.

Yours truly,



Robert Johnson, B.Eng, M.Arch, NCARB
Principle Architect, Johnson Design + Architecture

