Date: 8 September 2017
Our Ref: P17127

SHL Investment Group Pty Ltd
P.O. Box 338
South Hurstville NSW 2221

Dear Michael,

RE: 1 Charlotte St, Jordan Springs
DESIGN COMPLIANCE ASSESSMENT

Please find enclosed our BCA Compliance Report prepared in respect of the proposed dwellings to be situated at the above listed property.

In reviewing the content of this Report, particular attention is drawn to the content of Part 3 as Part 3 summarizes the compliance status of the proposed design in terms of each prescriptive provision of the BCA.
The inclusion of this summary enables an immediate understanding of the compliance status of the proposed design to be obtained.

Should you require any further information, please do not hesitate to contact me on the number provided.

Yours faithfully

Kieran Tobin
Director

DESIGN COMPLIANCE ASSESSMENT

PREPARED FOR

SHL Investment Group Pty Ltd

REGARDING

1 Charlotte St, Jordan Springs

Prepared By

BCA vision

REPORT REGISTER

The following report register documents the development and issue of this report and project as undertaken by this office, in accordance with the *Quality Assurance* policy of BCA Vision Pty Ltd.

Our Reference	Issue No.	Remarks	Issue Date
P17127	1	Design Compliance Assessment	8 September 2017

CONTENTS PAGE

1.0 INTRODUCTION

1.1 GENERAL

This "BCA Compliance Assessment" report has been prepared at the request of SHL Investment Group Pty Ltdand relates to 1 Charlotte St, Jordan Springs.

The project proposal includes construction of 27 3 storey attached class 1a dwellings and 26 Studio dwellings and associated garages.

This report is based upon, and limited to, the information depicted in the documentation provided for assessment, and does not make assumptions regarding "design intention" or the like.

1.2 REPORT BASIS

The content of this report reflects –

(a) The principles and provisions of BCA 2016 Volume 2;

(b) Architectural documentation provided by 8 Squared: –

Numbered	Titled	Dated
Sheet 1	Cover Sheet	07/09/17
Sheet 3	Master Plan - Overall	07/09/17
Sheet 4	Master Plan A	07/09/17
Sheet 5	Master Plan B	07/09/17
Sheet 7	Proposed Site Plan	07/09/17
Sheet 8	Floor Plan 14, 25 and 26	07/09/17
Sheet 9	Floor Plan 14, 25 and 26	07/09/17
Sheet 10	Elevations 14, 25 and 26	07/09/17
Sheet 11	Sections 14, 25 and 26	07/09/17
Sheet 12	Floor Plan 1 – 12 & 15 - 24	07/09/17
Sheet 13	Floor Plan 1 – 12 & 15 - 24	07/09/17
Sheet 14	Elevations – 12 & 15 - 24	07/09/17
Sheet 15	Sections 1 – 12 & 15 - 24	07/09/17
Sheet 20	Elevations 1 - 13	07/09/17
Sheet 21	Elevations 14 - 27	07/09/17

1.3 EXCLUSIONS

It is conveyed that this report should not construed to infer that an assessment for compliance with the following has been undertaken –

(a) Structural and services design documentation;

(b) General building services (i.e. passenger lifts);

(c) The individual requirements of service providers (i.e. Telstra, Water Supply, Energy Australia);
(d) The individual requirements of the Workcover Authority;
(e) Disability Discrimination Act (DDA).

1.4 REPORT PURPOSE

The purpose of this report is to identify the extent to which the architectural design documentation complies with the relevant prescriptive provisions of the BCA 2016. The status of the design is summarised within Part 3 of this report.

2.0 BUILDING DESCRIPTION

2.1 GENERAL

In the context of the Building Code of Australia (BCA), the subject development is described within items 2.2 – 2.6 below.

2.2 RISE IN STOREYS (CLAUSE C1.2)

The buildings are proposed to have a rise in storeys of two (2) and three (3)

2.2 BUILDING CLASSIFICATION (CLAUSE A3.2)

The buildings incorporate the following classifications: -

Class 1A	A residential Dwelling
Class 10a	A Private garage

2.3 ENERGY EFFICIENCY IN BUILDINGS (PART 3.12)

A BASIX certificate is required for the dwellings.

3.0 BCA ASSESSMENT – SUMMARY

3.1 SUMMARY

We have reviewed the referenced plans and in our opinion the proposal can comply with the Building Code of Australia 2015 subject to the following recommendations: -

3.2 PART 3.1.1 – EARTHWORKS

Clause	Requirement	Recommendation
3.1.1.1	Earthworks	Adherence during construction is required For Reference by Builder during Construction
3.1.1.2	Excavation adjacent to vacant adjoining property	
3.1.1.3	Excavation adjacent to existing buildings	
3.1.1.4	Fill	

3.3 PART 3.1.2 – DRAINAGE

Clause	Requirement	Recommendation
3.1.2.2	Drainage requirements	Hydraulic Engineering Advice is required. Provide Hydraulic Design Compliance Certificate ConstructionCertificate. A Compliance Certificate will be required on completion.
3.1.2.3	Surface water drainage	
3.1.2.4	Subsoil drainage	
3.1.2.5	Stormwater drainage	

3.4 PART 3.1.3 – TERMITE RISK MANAGEMENT

Clause	Requirement	Recommendation
3.1.3.2	Installation of termite barriers	Pest Protection must comply with AS 3660 Provide construction method in Project Specification prior to Construction Certificate. A Compliance Certificate will be required on completion.
3.1.3.4	Barriers for suspended Floors	
3.1.3.5	Attachments to buildings	

3.5 PART 3.2 – FOOTINGS AND SLABS

Clause	Requirement	Recommendation
3.2.1	**FOOTINGS AND SLABS**	Structural Engineers Advice is required. Provide Structural Engineers Details & Structural Design Certificate prior to Construction Certificate A Compliance Certificate will be required on completion.

3.6 PART 3.2.2 – PREPARATION

Clause	Requirement	Recommendation
3.2.2.1	Excavation for footings	Structural Engineers Advice is required. Provide Structural Engineers Details & Structural Design Certificate prior to Construction Certificate A Compliance Certificate will be required on completion.
3.2.2.3	Foundations for footings and	
3.2.2.5	Stepped footings	

3.7 PART 3.2.3 – CONCRETE REINFORCING

Clause	Requirement	Recommendation
3.2.3.1	Concrete	Structural Engineers Advice is required. Provide Structural Engineers Details & Structural Design Certificate prior to Construction Certificate A Compliance Certificate will be required on completion.
3.2.3.2	Steel reinforcement	

3.8 PART 3.2.5 – FOOTING & SLAB CONSTRUCTION

Clause	Requirement	Recommendation
3.2.5.1	Footing and slab construction	Structural Engineers Advice is required. Provide Structural Engineers Details & Structural Design Certificate prior to Construction Certificate A Compliance Certificate will be required on completion.
3.2.5.3	Shrinkage control	
3.2.5.4	Minimum edge beam dimensions	
3.2.5.5	Footings for fireplaces on Class A and S sites	

3.9 PART 3.3.1 – UNREINFORCED MASONRY

Clause	Requirement	Recommendation
3.3.1.2	External walls	Unreinforced Masonry must comply with AS 3700. Provide construction method in Project Specification prior to Construction Certificate. A Compliance Certificate will be required on completion.
3.3.1.3	Internal walls	
3.3.1.4	Isolated piers	
3.3.1.5	Masonry units	
3.3.1.6	Mortar mixes	
3.3.1.7	Mortar joints	
3.3.1.8	Vertical articulation joints	
3.3.1.9	Sub Floor Ventilation	
3.3.1.10	Shrinkage allowance for timber framing	

3.10 PART 3.3.3 – MASONRY ACCESSORIES

Clause	Requirement	Recommendation
3.3.3.2	Wall ties	Masonry Accessories must comply with AS 3700. Provide construction method in Project Specification prior to Construction Certificate. A Compliance Certificate will be required on completion.
3.3.3.3	Fixing straps and tie-down systems	
3.3.3.4	Lintels	
3.3.3.5	Corrosion protection	

3.11 PART 3.3.4 – WEATHERPROOFING OF MASONRY

Clause	Requirement	Recommendation
3.3.4.2	Width of cavity	Weatherproofing of masonry must comply with AS 3700. Provide construction method in Project Specification prior to Construction Certificate. A Compliance Certificate will be required on completion.
3.3.4.3	Cavity ventilation and drainage	
3.3.4.4	Damp-proof courses — materials	
3.3.4.5	Damp-proof courses—installation	
3.3.4.6	Flashings	
3.3.4.7	Location of flashings	
3.3.4.8	Flashings at the base of cavity walls	

3.3.4.9	Sill and head flashing	
3.3.4.10	Flashings at a roof abutting a wall	

3.12 PART 3.4.3 – TIMBER FRAMING

Clause	Requirement	Recommendation
3.4.3.0	Residential timber-framed construction	Where proposed Timber Wall and roof framing must comply with AS 1684. Structural Engineers Advice is required. Provide Structural Engineers Details & Structural Design Certificate prior to Construction Certificate A Compliance Certificate will be required on completion.

3.13 PART 3.4.4 – STRUCTURAL STEEL MEMBERS

Clause	Requirement	Recommendation
3.4.4.2	Structural steel members	Structural Engineers Advice is required. Provide Structural Engineers Details & Structural Design Certificate prior to Construction Certificate A Compliance Certificate will be required on completion.
3.4.4.3	Columns	
3.4.4.4	Corrosion protection	

3.14 PART 3.5.1 – ROOF CLADDING

Clause	Requirement	Recommendation
3.5.1.3	Metal Sheet Roofing	Metal Sheet Roofing must be installed in accordance with Clause 3.5.1.3 of the National Construction Code. Provide construction method in Project Specification prior to Construction Certificate. A Compliance Certificate will be required on completion.

3.15 PART 3.5.2 – GUTTERS & DOWNPIPES

Clause	Requirement	Recommendation
3.5.2.2	Materials	Gutter and downpipe installation must comply with AS/NZS 3500 Provide construction method in Project Specification prior to Construction Certificate.
3.5.2.3	Selection of guttering	
3.5.2.4	Installation of gutters	
3.5.2.5	Downpipes — size and installation	

3.16 PART 3.5.3 – WALL CLADDING

Clause	Requirement	Recommendation
3.5.3.5	Eaves and soffit linings	Flashing to openings and eave cladding installation must comply with AS 1562.1 Provide construction method in Project Specification prior to Construction Certificate. A Compliance Certificate will be required on completion.
3.5.3.6	Flashings to wall openings	

3.17 PART 3.6– GLAZING

Clause	Requirement	Recommendation
3.6.2	Glazing sizes and installation	Glazing must comply with AS 1288 and AS 2047 Provide construction method in Project Specification prior to Construction Certificate. A Compliance Certificate will be required on completion.
3.6.3	Fully framed glazing installed in perimeter of buildings	
3.6.4	Human impact safety requirements	
3.6.4.1	Doors	
3.6.4.2	Door side panels	
3.6.4.3	Full height framed glazed panels	
3.6.4.4	Glazed panels, other than doors or side panels, on the perimeter of rooms	
3.6.4.5	Bathroom, ensuite and spa room glazing	
3.6.4.6	Visibility of glazing	

3.18 PART 3.7.1 – FIRE SEPARATION

Clause	Requirement	Recommendation
3.7.1.3	**External walls of Class 1 buildings** An *external wall* of a Class 1 building, and any openings in that wall, must comply with **3.7.1.5** if the wall is less than— (a) 900 mm from an allotment boundary other than the boundary adjoining a road alignment or other public space; or (b) 1.8 m from another building on the same allotment other than an appurtenant Class 10 building or a detached part of the same Class 1 building.	Provide construction method in Project Specification prior to Construction Certificate. A Compliance Certificate will be required on completion.
3.7.1.6	**Construction of external walls** (a) *External walls* (including gables) *required* to be *fire-resisting* (referred to in **3.7.1.3** or **3.7.1.6**) must extend to the underside of a *non-combustible* roof covering or *noncombustible* eaves lining (See **Figure 3.7.1.3**) and must— (i) have an FRL of not less than 60/60/60 when tested from the outside; or (ii) be of masonry-veneer construction in which the external masonry veneer is not less than 90 mm thick; or (iii) be of masonry construction not less than 90 mm thick. (b) Openings in *external walls required* to be *fire-resisting* (referred to in **3.7.1.3** or **3.7.1.6**) must be protected by— (i) non-openable fire *windows* or other construction with an FRL of not less than –/60/–; or (ii) *self-closing* solid core doors not less than 35 mm thick. (c) Subfloor vents, roof vents, weepholes, control joints, construction joints and penetrations for pipes, conduits and the	For Reference

	like need not comply with **(b)**. (d) Concessions for non-*habitable room windows*. Despite the requirements in **(b)**, in a non-*habitable room*,a *window* that faces the boundary of an adjoining allotment may be not less than 600 mm from that boundary or, where the *window* faces another building on the same allotment, not less than 1200 mm from that building provided that— (i) in a bathroom, laundry or toilet, the opening has an area of not more than 1.2 m^2; or (ii) in a room other than referred to in **(i)**, the opening has an area of not more than 0.54 m^2 and— (A) the *window* is steel-framed, there are no opening sashes and it is glazed in wired glass; or (B) the opening is enclosed with translucent hollow glass blocks	
3.7.1.9	**Fire hazard properties** The fire hazard properties of materials used in a Class 1 building, including common floor or ceiling spaces with a Class 10 building, must comply with the following: (a) *Sarking-type materials* used in the roof must have a *flammability index* not greater than 5. (b) Flexible ductwork used for the transfer of products initiating from a heat source that contains a flame must comply with the fire hazard properties set out in AS 4254.	For Reference and inclusion within the building specification
3.7.1.11	**Separating floors**	Provide construction method in Project Specification prior to Construction Certificate. A Compliance Certificate will be required on completion.

	(a) Where parts of a Class 1a dwelling are located above or below a Class 10a *private garage* which is not appurtenant to that Class 1a dwelling, any floor separating the Class 1a dwelling from the non-appurtenant Class 10a *private garage* must— (i) be a floor/ceiling system incorporating a ceiling which has a *resistance to the incipient spread of fire* to the space above itself of not less than 60 minutes; or (ii) have an FRL not less than 30/30/30 when tested from the underside; or (iii) have a *fire-protective covering* on the underside of the floor, including beams incorporated in it, if the floor is *combustible* or of metal. (b) Where a floor subject to **(a)(ii)** depends on direct vertical or lateral support from another part to maintain its FRL, that supporting part must have an FRL of not less than 30/-/-. (c) Where a service passes through a floor referred to in **(a)**, the penetration must not reduce the fire performance of the floor or covering.	

3.19 PART 3.7.2 – SMOKE ALARMS

Clause	Requirement	Recommendation
3.7.2.2	Requirements for smoke alarms Smoke alarms must— (a) be located in— (i) Class 1a buildings in accordance with 3.7.2.3; and (ii) Class 1b buildings in accordance with 3.7.2.4 and 3.7.2.5; and (b) comply with AS 3786, except that in a Class 10a private garage where the use of the area is likely to result in smoke alarms causing spurious signals, any other alarm deemed suitable in accordance with AS 1670.1 may be installed provided that smoke alarms complying AS 3786 are installed elsewhere in the Class 1	Smoke alarm installation must comply with AS 3786. Provide construction method in Project Specification prior to Construction Certificate.

	building; and (c) be connected to the consumer mains power where consumer power is supplied to the building; and (d) be interconnected where there is more than one alarm.	
3.7.2.3	Location — Class 1a buildings	Smoke alarms must be provided within hallways leading to a bedroom and within each level for the 3 and 2 storey dwellings. Where more than 1 smoke alarm is provided to a dwelling the alarms must be interlinked.

3.20 PART 3.8.1 – WET AREAS

Clause	Requirement	Recommendation
3.8.1.2	Wet Areas	Waterproofing to wet areas must comply with AS 3740 Provide construction method in Project Specification prior to Construction Certificate.

3.21 PART 3.8.3 – FACILITIES

Clause	Requirement	Recommendation
3.8.3.3	Construction of sanitary compartments	For reference

3.22 PART 3.8.4 – LIGHT

Clause	Requirement	Recommendation
3.8.4.3	Artificial lighting	Artificial Lighting must comply with AS 1680.0 Provide construction method in Project Specification prior to Construction Certificate.

3.23 PART 3.8.5 – VENTILATION

Clause	Requirement	Recommendation
3.8.5.2 3.8.5.3	Mechanical ventilation	Mechanical ventilation complying with AS 1668.2 is required within the bathrooms Provide construction method in Project Specification prior to Construction Certificate.

3.24 PART 3.8.6 – SOUND INSULATION

Clause	Requirement	Recommendation
3.8.6.1	**Application** Compliance with this acceptable construction practice satisfies *Performance Requirement* P2.4.6 for sound insulation.	Further details regarding Acoustic wall compliance is required prior to Construction Certificate.
3.8.6.3	**General installation requirements for walls** (a) To achieve the appropriate level of sound insulation, walls must— (i) be constructed in accordance with the appropriate requirements contained in (b) to (f); and (ii) at the junction of sound insulated walls with any perimeter walls and roof cladding, be sealed in accordance with Figure 3.8.6.2 b) Masonry units must be laid with all joints filled solid, except for adequately sound insulated articulation joints, including those between the masonry and any adjoining construction. (c) Concrete panels must have joints between panels and any adjoining construction filled solid. (d) Plasterboard must be installed as follows: (i) If one layer is *required* on both sides of a wall the joints must be staggered on opposite sides (See Figure 3.8.6.3). (ii) If two layers are *required*, the first layer must be fastened in accordance with (i) and the second layer joints must not coincide with those of the first layer (See Figure 3.8.6.3). (iii) The following joints must be taped and filled solid:	Further details regarding Acoustic wall compliance is required prior to Construction Certificate.

	(A) Outer layer joints between sheets. (B) Joints between sheets and any adjoining construction. (e) Steel framing and perimeter members must be installed as follows: (i) The section of steel must be not less than 0.6 mm thick. (ii) Studs must be not less than 63 mm in depth unless another depth is specified in Table 3.8.6.2. (iii) Studs must be fixed to steel top and bottom plates of sufficient depth to permit secure fixing of the plasterboard. (iv) All steel members at the perimeter of the wall must be securely fixed to the adjoining structure and bedded in resilient compound or the joints must be caulked so that there are no voids between the steel members and the wall. (f) Timber studs and perimeter members must be installed as follows: (i) Studs must be fixed to top and bottom plates of sufficient depth to permit secure fixing of the plasterboard. (ii) Noggings and like members must not bridge between studs supporting different wall leaves. (iii) All timber members at the perimeter of the wall must be securely fixed to the adjoining structure and bedded in resilient compound or the joints must be caulked so there are no voids between the timber members and the wall.	
3.8.6.4	**Services** (a) Services must not be chased into concrete or masonry *separating walls*. (b) If a duct, soil, waste, water supply or storm water pipe serves or passes through a *separating wall* or is located in a *separating wall*— (i) a door or panel providing access to a duct or pipe *required* to be separated must— (A) not open into any *habitable room*, other than a kitchen; and (B) in any other part must be firmly fixed so as to overlap the	Further details regarding Acoustic wall compliance is required prior to Construction Certificate.

	frame or rebate of the frame by not less than 10 mm and be constructed of— (aa) wood, plasterboard or blockboard not less than 33 mm thick; or (bb) compressed fibre reinforced cement sheeting not less than 9 mm thick; or (cc) other suitable material with a mass per unit area not less than 24.4 kg/m^2; and (ii) in the case of a water supply pipe, it must— (A) only be installed in discontinuous construction; and (B) in the case of a water supply pipe that serves one dwelling, not be fixed to the wall leaf on the side of any other dwelling and have a clearance not less than 10 mm to the other wall leaf. (c) Electrical outlets must be offset from each other— (i) in masonry walling, not less than 100 mm; and (ii) in timber or steel framed walling, not less than 300 mm.	

3.1 PART 3.9.1 – STAIR CONSTRUCTION

3.9.1.1	**Application** Compliance with this acceptable construction practice satisfies *Performance Requirement* P2.5.1, provided the stair complies with the appropriate structural requirements of the *Housing Provisions*.	Detail on plans OR Provide construction method in Project Specification prior to Construction Certificate.
3.9.1.4	**Riser and going dimensions** The *riser* and *going* dimensions for each *flight*, except for the *going* of *winders* in lieu of a quarter or half *landing*, must comply with the following: (a) The *going* (G), *riser* (R) and slope relationship quantity (2R+G) must be in accordance with Figure 3.9.1.2.	Detail on plans OR Provide construction method in Project Specification prior to Construction Certificate.

	(b) The point for measurement of the *going* (G) in the slope relationship quantity as described in Figure 3.9.1.3 must be— (i) for *tapered treads* (other than treads in a *spiral stair*)— (A) not more than 1 m wide, the middle of the unobstructed width of the stair (see Figure 3.9.1.3, Diagram b); and (B) more than 1 m in width, 400 mm from the unobstructed width of each side of the stair (see Figure 3.9.1.3, Diagram c); and (ii) for treads in *spiral stairs*, the point seven tenths of the unobstructed distance from the face of the centre pole or support towards the handrail side (see Figure 3.9.1.4).	
3.9.1.5	**Thresholds** Where a threshold is more than 190 mm above the adjoining surface it must incorporate steps having *riser* and *going* dimensions in accordance with 3.9.1.4	Detail on plans OR Provide construction method in Project Specification prior to Construction Certificate.

3.1 PART 3.9.2 – BALUSTRADES

3.9.2.4	**Handrails** **(a)** Handrails to a stairway or ramp must— (i) be located along at least one side of the *flight* or ramp; and (ii) be located along the full length of the *flight* or ramp, except in the case where a handrail is associated with a barrier the handrail may terminate where the barrier terminates; and (iii) have the top surface of the handrail not less than 865 mm vertically above the nosings of the stair treads or the floor surface of the ramp; and (iv) have no obstruction on or above them that will tend to break a handhold, except for newel posts, ball type stanchions, or the	Detail on plans OR Provide construction method in Project Specification prior to Construction Certificate.

	like.	
3.9.2.5	**Protection of openable windows** **(a)** A window opening must be provided with protection, if the floor below the window in a bedroom is 2 m or more above the surface beneath. **(b)** Where the lowest level of the window opening is less than 1.7 m above the floor, a window opening covered by (a) must comply with the following: (i) The openable portion of the window must be protected with— (A) a device capable of restricting the window opening; or (B) a screen with secure fittings. (ii) A device or screen *required* by (i) must— (A) not permit a 125 mm sphere to pass through the window opening or screen; and (B) resist an outward horizontal action of 250 N against the— (aa) window restrained by a device; or (bb) screen protecting the opening; and (C) have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden. **(c)** A barrier with a height not less than 865 mm above the floor is *required* to an openable window— (i) in addition to window protection, when a child resistant release mechanism is *required* by (b)(ii)(C); and (ii) where the floor below the window is 4 m or more above the surface the window is not covered by (a). **(d)** A barrier covered by (c) must not— (i) permit a 125 mm sphere to pass through it; and	Detail on plans OR Provide construction method in Project Specification prior to Construction Certificate.

	(ii) have any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that facilitate climbing.	

Author
KIERAN TOBIN
ACCREDITED CERTIFIER BPB NO 0409
8 September 2017