The Star: Modofi	cation 13 — Apartment Desig	gn Guide Ana	Ilysis - June 2017		
Clause Number	Clause Title	Objective	Design Criteria	Compliance	fjmt Commentary
	Private Open Space and Balconies	4E-1	Apartments provide appropriately sized private open space and balconies to enhance residential amenity * 1 Bedroom - 8m ² - min 2m depth * 2 Bedroom - 10m ² - min 2m depth * 3 Bedroom - 12m ² - min 2.4m depth For apartments at ground level or on a podium or similar structure, a private open space is provided instead of a balcony. It must have a minimum area of 15m ² and a minimum depth of 3m.	J	 To ensure a high level of amenity, all apartments winter garden' in lieu of open balconies. All of the ADG area objectives. The scheme results in * 1 Bed External Area - 8m² * 2 Bed External Area - 10m² * 3 Bed External Area - 12m² Where 'winter gardens' are not practical due to more than 10% of all apartments will have Julie In some instances winter garden areas have bet connection through the apartments, a more usa facade. This maximises the sunlight through the shown in the vignettes below.
		4E-2	Primary private apart space and beloaning are appropriately leasted to aphance liveshility for residents	1	• "Winter gerdane" are leasted off the living grace
		4E-3	Primary private open space and balconies are appropriately located to enhance liveability for residents	V	'Winter gardens' are located off the living areas 'Winter gardens' are located within the building
			Private open space and balcony design is integrated into and contributes to the overall architectural form and detail of the building	V	 'Winter gardens' are located within the building Operable screens and louvres are used to contr
		4E-4	Private open space and balcony design maximises safety	\checkmark	The proposed development satisfies the require
	Common Circulation and Spaces	4F-1	 Common circulation spaces achieve good amenity and properly service the number of apartments 1. The maximum number of apartments off a circulation core on a single level is eight 2. For buildings of 10 storeys and over, the maximum number of apartments sharing a single lift is 40 	\checkmark	 The maximum number of apartments on a single the circulation space is lifted by providing access immediately adjacent to the lifts.
		4F-2	Common circulation spaces promote safety and provide for social interaction between residents	\checkmark	 Access to views and natural daylight immediate the areas in front of lifts. Additionally corridor w interaction of residents.
	Storage	4G-1	In addition to storage in kitchens, bathrooms and bedrooms, the following storage is provided: * 1 Bedroom - 6m3 * 2 Bedroom - 8m3 * 3 Bedroom - 10m3 At least 50% of the required storage is to be located within the apartment	V	 Storage has been incorporated in accordance w Refer to schedule within the appendices of the schedule within the schedule within the appendices of the schedule within the schedule within the appendices of the schedule within the schedule
		4G-2	Additional storage is conveniently located, accessible and nominated for individual apartments	\checkmark	 Storage has been incorporated in accordance v storage a maximum of 50% is achieved through within each individual apartment.
	Acoustic Privacy	4H-1	Noise transfer is minimised through the siting of buildings and building layout	\checkmark	 Apartments are located with the tower at the nor apartments and the greater site is achieved via sources such as lift shafts and common corrido core arrangement which limits the number of ap
		4H-2	Noise impacts are mitigated within apartments through layout and acoustic treatments	\checkmark	 Proposals have been developed with considera requirement.

ents are provided with private open space in the form of a of the proposed apartment 'winter garden' areas satisfy in the following range of minimum 'winter garden' sizes:

to noise or wind, Juliette balconies are proposed. No liette balconies.

been redistributed in order to give better visual sable open plan layout and better connectivity to the the dwelling and enhances views. Examples of this are



as to maximise sunlight and views.

ing envelope to become an integral part of the form. ontrol sunlight and winds.

irements of the objective.

ngle upper level is seven (7). Additionally, the amenity of cess to high quality views and natural daylight

ately adjacent to the lifts will provide a high amenity to widths allow for sufficient circulation space and

e with the nominated requirements. he Design Statement

e with the nominated requirements. Of the required ugh basement cages, with the remaining 50% achieved

northern end of the site. Separation between the ia positioning of the communal open space. Noise idors have also been minimised by adoption of a side f apartments adjoining the core.

eration of this and the detail design can achieve this

		Ilysis - June 2017		
r Clause Title	Objective	Design Criteria	Compliance	fjmt Commentary
Noise and Pollution	4J-1	In noisy or hostile environments the impacts of external noise and pollution are minimised through the careful siting and layout of buildings	J	 Apartments are located within the apartments and the greater site is are separated from street level and as measured from Jones Bay Road
	4J-2	Appropriate noise shielding or attenuation techniques for the building design, construction and choice of materials are used to mitigate noise transmission	V	 Insulation will be provided to the selected with consideration of acc 'winter garden' areas to further min accompanies this submission.
Apartment Mix	4K-1	A range of apartment types and sizes is provided to cater for different household types now and into the future	\checkmark	The proposals include a range of a proposals mix reflects 39.7% 1B, s
	4K-2	The apartment mix is distributed to suitable locations within the building	\checkmark	• The mix is distributed across the fl floors and orientated to primary vie
Ground Floor Apartments	4L-1	Street frontage activity is maximised where ground floor apartments are located	n/a	Not applicable
	4L-2	Design of ground floor apartments delivers amenity and safety for residents	n/a	Not applicable
Facades	4 M -1	Building facades provide visual interest along the street while respecting the character of the local area	\checkmark	The proposals have been develope materiality that respond to the loca
	4 M-2	Building functions are expressed by the facade	\checkmark	The facades vary in articulation and create a highly varied and contextu
Roof Design	4N-1	Roof treatments are integrated into the building design and positively respond to the street	\checkmark	• The proposals for the top of the top from the local and wider public do
	4N-2	Opportunities to use roof space for residential accommodation and open space are maximised	\checkmark	• The top of the building incorporate
	4N-3	Roof design incorporates sustainability features	\checkmark	The top of the building incorporate nominated in the Design Report ar
Landscape Design	40-1	Landscape design is viable and sustainable	\checkmark	 Detailed landscape proposals have Design Report as form part of this
	40-2	Landscape design contributes to the streetscape and amenity	\checkmark	 Detailed landscape proposals have Design Report as form part of this street planting and trees.
Planting on structures	4P-1	Appropriate soil profiles are provided	\checkmark	 Raised planters within the upper le scaled plants.
	4P-2	Plant growth is optimised with appropriate selection and maintenance	\checkmark	• Plant selection will be selected to a
	4P-3	Planting on structures contributes to the quality and amenity of communal and public open spaces	\checkmark	 Detailed landscape proposals for tail included in the Landscape Design
Universal Design	4Q-1	 Universal design features are included in apartment design to promote flexible housing for all community members Developments achieve a benchmark of 20% of the total apartments incorporating the Liveable Liveable Cuideline's chieve land universal design features 	Y	• 20% of the total apartments can i design features.
	4Q-2	Housing Guideline's silver level universal design features A variety of apartments with adaptable designs are provided	\checkmark	• The proposals achieve this require to the schedule in Section 11.5 of distribution, along with Section 11
	4Q-3	Apartment layouts are flexible and accommodate a range of lifestyle needs	\checkmark	Equitable access is provided to all
Adaptive Reuse	4 R -1	New additions to existing buildings are contemporary and complementary and enhance an area's identity and sense of place	n/a	Not applicable
	4R-2	Adapted buildings provide residential amenity while not precluding future adaptive reuse	n/a	Not applicable
Mixed Use	4S-1	Mixed use developments are provided in appropriate locations and provide active street frontages that encourage pedestrian movement	V	• The project is a compliant mixed u retail locations and expected pede achieve the objective.
	4 S -2	Residential levels of the building are integrated within the development, and safety and amenity is maximised for residents	\checkmark	The proposed development satisfie
Awning and Signage	4 T -1	Awnings are well located and complement and integrate with the building design	\checkmark	• The proposed development will sa

the tower at the northern end of the site. Separation between the is achieved via positioning of the communal open space. Apartments and the existing public domain by the podium, approximately 38m high load.

e solid facade walls to minimise noise. Glazing systems have been acoustic requirement. Elements of solid walls are provided to the minimise noise transfer. Refer to the Acoustic Report that

of apartment types ranging from 1 bed to 3 bed plus study. The B, 51% 2B, and 9.3% 3B.

e floors with the premium/larger apartments typically taking up higher views.

oped with careful podium articulation, facade treatments and ocal precinct, street scale and wider Pyrmont character.

and materiality in response to function and overall requirements to extual response. Refer to the Design Report for greater detail.

tower have developed with high regard to high visibility of the tower domain.

ate functions as related to the hotel component of the tower.

ates opportunities for photo voltaic arrays and sustainable features as t and ESD Report.

nave been developed by Urbis and are included in the Landscape his submission.

ave been developed by Urbis and are included in the Landscape his submission. A key component of this is upgrades to the existing

r levels will provide sufficient soil depth for planting appropriately

to achieve this requirement.

or the communal open space have been developed by Urbis and are ign Report as form part of this submission.

an incorporate the Liveable Housing Guideline's silver level universal

uirement with 15% Adaptable and 20% Universal Design. Please refer 5 of the Design Statement for an adaptable apartment mix and level 11.11 for illustrations.

all apartment doors in accordance with AS1428.2

d use development within the approved boundaries and given the destrian activation of the precinct, the proposed development will

sfies the requirements of the objective.

satisfy the requirements of the objective.

	13 — Apartment Design			Consultan	
lause Number Claus	e Title	Objective	Design Criteria	Compliance	fjmt Commentary
		4T-2	Signage responds to the context and desired streetscape character	√	The proposed development will sa
Energ	y Efficiency	4U-1	Development incorporates passive environmental design Adequate natural light is provided to habitable rooms (see 4A Solar and daylight access) Well located, screened outdoor areas should be provided for clothes drying 	\checkmark	 See 'Solar and Daylight Access' f. All apartments in proposal have in
		4U-2	Development incorporates passive solar design to optimise heat storage in winter and reduce heat transfer in summer	\checkmark	 The proposed development will sa glazed facade system with intersti of the residential floors.
		4U-3	Adequate natural ventilation minimises the need for mechanical ventilation	\checkmark	Natural ventilation is provided to a
	r Management and ervation	4V-1	Potable water use is minimised	V	 Water efficiency will be achieved via: Water efficient fixtures and fitting a Water meters with BMS connection recycled water services The existing site recycled water sy WC flushing Refer to the MOD 13 Star Water in the service of the service of
		4V-2	Urban storm water is treated on site before being discharged to receiving waters	V	 On-site treatment and discharge reduction The existing disused northern store MOD 13 areas will be diverted with Rainwater collected shall be directed distribution system. Install new rainwater pumps and for recycled flushing water distribution New building area catchment will and utilise the existing stormwater Refer to the MOD 13 Star Water of the start of the st
		4V-3	Flood management systems are integrated into site design	\checkmark	 A number of modifications to exist proposed on Pyrmont and Edward modelled 1 in 100 year ARI flood Refer to the MOD 13 Star Flood A
Waste	e Management	4W-1	Waste storage facilities are designed to minimise impacts on the streetscape, building entry and amenity of residents	\checkmark	All waste storage and management
		4W-2	Domestic waste is minimised by providing safe and convenient source separation and recycling	\checkmark	Source separation and recycling factors
Build	ing Maintenance	4X-1	Building design detail provides protection from weathering	V	 The materiality, quality and detailing requirements of the client brief, but The circular nature of the building, even although still turbulent flow warea. The sofit created by the building for again. The ledges created by the building (so run-off has a high dirt content, Refer to section 13 of the Design
		4X-2	Systems and access enable ease of maintenance	\checkmark	• All facades are accessible for clea
		4X-3	Material selection reduces ongoing maintenance costs	1	Materials will be of high quality wi maintenance.
	ing Configuration - y of Children		 Windows have safety screens, window locks or other safety devices to prevent falls. Room layouts minimise the need to locate furniture immediately adjacent windows or balustrades 	\checkmark	 All windows located at fall heigh to 125mm. Windows to bedroom

- satisfy the requirements of the objective.
- ' for natural daylighting.
- internal drying facilities and 'winter garden' spaces.

satisfy the requirements of the objective via a high performance triplerstitial curtains and horizontal shade devices across the north facades

o all apartments.

ng selection

ction will be installed at all major water use areas for hot and cold and

system will be extended to the new development for public amenity

er Management Report for further details.

tion of collected stormwater will be achieved via: tormwater harvesting tank is to be reinstated. New drainage from where practical to the reinstated harvesting tank rected to interface with the existing site recycled flushing water

d filtration equipment at level B4 and interface with the existing site tion system

vill be directed to either the northern or southern collection systems, ter quality treatment devices.

er Management Report for further details.

xisting stormwater infrastructure surrounding the site have been ard Streets. The result of these works will be lower flood levels in the od depth.

d Assessment Report for further details.

nent facilities are not accessible nor visible to the general public.

g facilities have been incorporated.

illing of the proposed development are in keeping with the high building typology, climate adaptation plan, and expected building life. ngs form enhances the free stream flow of water, resulting in a more w with no stagnation points and thus a more even distribution of wet

form creates a drip line and the water detaches to become rainfall

lings form will utilise a first flush drainage system to deal with light rain ent) however handles intense flow by normal overtopping. gn Statement for facade details.

leaning and maintenance via a combination of BMU, and rope access. with final selections made with the intent for minimum ongoing

ight will be capable of being fitted with restrictors that limit openings oms and living areas (with the exception of wintergarden operable

17.4 Apartment Storage Schedule

	Storage (m3)						EY / REFEREN	310
Area Achieve	TOTAL	Basement	In- apartment	Briefed Area (m3)	Туре	Apartment No.	Fir code	Level
	13.3	5.8	7.5	8.0	2 BED	387	A30	Level 38
	11.6	5.6	6.0	8.0	2 BED	386		
	13.4	5.6	7.8	8.0	2 BED	385		
	16.7	5.6	11.1	6.0	1 BED	384		
	23.2	5.6	17.6	8.0	2 BED	383		
	13.0	6.0	7.0	10.0	3 BED	382		
	10.7	5.6	5.1	8.0	2 BED	381		
	13.1	5.6	7.5	8.0	2 BED	377	A29	Level 37
	11.6	5.6	6.0	8.0	2 BED	376		
	13.4	5.6	7.8	8.0	2 BED	375		
	16.7	5.6	11.1	6.0	1 BED	374		
	23.2	5.6	17.6	8.0	2 BED	373		
	17.6	10.6	7.0	10.0	3 BED	372		
	10.7	5.6	5.1	8.0	2 BED	371		
1	13.1	5.6	7.5	8.0	2 BED	367	A28	Level 36
J	11.6	5.6	6.0	8.0	2 BED	366		
J	13.4	5.6	7.8	8.0	2 BED	365		
J	16.7	5.6	11.1	6.0	1 BED	364		
J	23.2	5.6	17.6	8.0	2 BED	363		
Ĵ	14.1	7.1	7.0	10.0	3 BED	362		
Ĵ	10.7	5.6	5.1	8.0	2 BED	361		
Ĵ	13.1	5.6	7.5	8.0	2 BED	357	A27	Level 35
Ĵ	11.6	5.6	6.0	8.0	2 BED	356		
Ĵ	13.4	5.6	7.8	8.0	2 BED	355		
Ĵ	17.2	6.0	11.1	6.0	1 BED	354		
Ĵ	23.6	6.0	17.6	8.0	2 BED	353		
Ĵ	13.1	6.2	7.0	10.0	3 BED	352		
Ĵ	11.1	6.0	5.1	8.0	2 BED	351		
J	13.5	6.0	7.5	8.0	2 BED	347	A26	Level 34
J	12.0	6.0	6.0	8.0	2 BED	346	7120	2010101
J	13.8	6.0	7.8	8.0	2 BED	345		
1	17.2	6.0	11.1	6.0	1 BED	344		
	23.6	6.0	17.6	8.0	2 BED	343		
	13.5	6.5	7.0	10.0	3 BED	343		
	11.1	6.0	5.1	8.0	2 BED	341		
	14.2	6.7	7.5	8.0	2 BED	337	A25	Level 33
	12.7	6.7	6.0	8.0	2 BED	336	AZJ	Level 33
	12.8	5.0	7.8	8.0	2 BED	335		
		5.0		6.0	1 BED	334		
	16.2	1	11.1					
	24.4	6.8 6.5	17.6 7.0	8.0 10.0	2 BED 3 BED	333 332		
	13.5							
	11.9	6.8	5.1	8.0	2 BED	331	404	1
~	12.6	5.0	7.5	8.0	2 BED	327	A24	Level 32
	11.0	5.0	6.0	8.0	2 BED	326		
	16.5	8.8	7.8	8.0	2 BED	325		
	18.6	7.5	11.1	6.0	1 BED	324		
×,	26.3	8.8	17.6	8.0	2 BED	323		
⊢ ◄,	12.7	5.7	7.0	10.0	3 BED	322		
⊢ ✓,	10.1	5.0	5.1	8.0	2 BED	321		
	12.6	5.0	7.5	8.0	2 BED	317	A23	Level 31

	Storage (m3)					STOREY / REFERENCE				
Are Achie	TOTAL	Basement	In- apartment	Briefed Area (m3)	Туре	Apartment No.	Fir code	Level		
	12.8	5.0	7.8	8.0	2 BED	315				
~	16.2	5.0	11.1	6.0	1 BED	314				
~	22.6	5.0	17.6	8.0	2 BED	313				
~	14.2	7.2	7.0	10.0	3 BED	312				
~	10.1	5.0	5.1	8.0	2 BED	311				
~	12.6	5.0	7.5	8.0	2 BED	307	A22	Level 30		
~	11.0	5.0	6.0	8.0	2 BED	306				
~	12.8	5.0	7.8	8.0	2 BED	305				
~	16.2	5.0	11.1	6.0	1 BED	304				
~	22.6	5.0	17.6	8.0	2 BED	303				
~	12.0	5.0	7.0	10.0	3 BED	302				
~	10.1	5.0	5.1	8.0	2 BED	301				
	12.6	5.0	7.5	8.0	2 BED	297	A21	Level 29		
~	11.0	5.0	6.0	8.0	2 BED	296				
~	12.8	5.0	7.8	8.0	2 BED	295				
~	16.2	5.0	11.1	6.0	1 BED	294				
~	22.6	5.0	17.6	8.0	2 BED	293				
	13.3	6.3	7.0	10.0	3 BED	292				
	10.1	5.0	5.1	8.0	2 BED	291				
	8.7	5.0	3.7	6.0	1 BED	287	A20	Level 28		
	15.1	5.0	10.1	8.0	2 BED	286				
~	15.5	7.9	7.6	8.0	2 BED	285				
~	16.7	5.0	11.7	6.0	1 BED	284				
	22.1	5.0	17.0	8.0	2 BED	283				
	13.7	6.7	7.0	10.0	3 BED	282				
~	10.1	5.0	5.1	8.0	2 BED	281				
~	8.7	5.0	3.7	6.0	1 BED	277	A19	Level 27		
	15.1	5.0	10.1	8.0	2 BED	276				
~	12.6	5.0	7.6	8.0	2 BED	275				
	16.1	5.0	11.1	6.0	1 BED	274				
	22.0	5.0	16.9	8.0	2 BED	273				
	12.7	5.7	7.0	10.0	3 BED	272				
	10.1	5.0	5.1	8.0	2 BED	271				
	8.7	5.0	3.7	6.0	1 BED	267	A18	Level 26		
	14.6	5.0	9.6	8.0	2 BED	266				
	12.6	5.0	7.6	8.0	2 BED	265				
	16.1	5.0	11.1	6.0	1 BED	264				
	22.0	5.0	16.9	8.0	2 BED	263				
	16.0	9.0	7.0	10.0	3 BED	262				
	10.2	5.0	5.1	8.0	2 BED	261				
	8.7	5.0	3.7	6.0	1 BED	257	A17	Level 25		
	14.7	5.0	9.7	8.0	2 BED	256		-		
	12.3	5.0	7.3	8.0	2 BED	255				
	16.1	5.0	11.1	6.0	1 BED	254				
	22.0	5.0	16.9	8.0	2 BED	253				
	12.8	5.8	7.0	10.0	3 BED	252				
	10.1	5.0	5.1	8.0	2 BED	251				
	10.7	5.0	5.6	8.0	2 BED	247	A16	Level 24		
	8.1	5.0	3.1	6.0	1 BED	247	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	2010127		
	12.6	5.0	7.6	8.0	2 BED	245				
	13.6	5.0	8.6	6.0	1 BED	243				

STO	REY / REFERE	NCE		Storage (m3)				
Level	Fir code	Apartment No.	Туре	Briefed Area (m3)	In- apartment	Basement	TOTAL	Area Achieved
		243	2 BED	8.0	15.2	5.5	20.7	
		242	3 BED	10.0	6.9	5.0	11.9	
		241	2 BED	8.0	5.1	5.0	10.1	
Level 23	A15	237	1 BED	6.0	6.1	5.0	11.1	
		236	1 BED	6.0	3.2	5.0	8.2	
		235	2 BED	8.0	4.4	5.0	9.5	
		234	1 BED	6.0	8.6	8.5	17.1	
		233	2 BED	8.0	15.2	5.5	20.7	
		232	3 BED	10.0	6.9	5.0	11.9	
		231	2 BED	8.0	5.1	8.3	13.4	
Level 22	A14	227	1 BED	6.0	3.6	5.0	8.6	1
		226	1 BED	6.0	3.0	5.0	8.1	
		225	2 BED	8.0	4.4	5.0	9.5	J
		224	1 BED	6.0	3.5	5.0	8.5	Ĵ
		223	2 BED	8.0	15.2	5.5	20.7	Ĵ
		222	3 BED	10.0	6.9	5.1	12.0	Ĵ
		221	2 BED	8.0	5.1	5.0	10.1	Ĵ
Level 21	A13	216	2 BED	8.0	5.9	5.0	11.0	Ĵ
		215	2 BED	8.0	5.2	6.4	11.6	Ĵ
		214	1 BED	6.0	5.4	6.4	11.8	J
		213	2 BED	8.0	15.4	5.0	20.5	J
		212	3 BED	10.0	6.2	5.3	11.5	J
		211	2 BED	8.0	5.1	5.0	10.1	J
Level 20	A12	206	2 BED	8.0	4.9	5.1	9.9	J
2606120	712	205	2 BED	8.0	5.8	5.0	10.8	1
		204	1 BED	6.0	5.4	5.0	10.4	J
		203	2 BED	8.0	16.0	5.0	21.1	J
		202	3 BED	10.0	6.7	8.9	15.6	1
		201	2 BED	8.0	5.1	6.5	11.6	
Level 19	A11	196	1 BED	6.0	7.0	6.4	13.4	
Leven 15		195	2 BED	8.0	5.2	5.0	10.4	
		195	1 BED	6.0	10.7	5.0	15.7	
		194	1 BED	6.0	9.9	5.0	14.9	
		193		i	1			
		1	2 BED 2 BED	8.0	7.0	5.0	12.1	
	A 1 0	191 186		8.0	5.0	5.0	10.0	1
Level 18	A10	i	1 BED	6.0	5.4	5.0	10.5	×.
		185	2 BED	8.0	4.4	5.0	9.4	×,
		184	1 BED	6.0	10.7	5.0	15.7	
		183	1 BED	6.0	9.9	5.0	14.9	
		182	2 BED	8.0	7.5	5.0	12.6	×,
Laure 1 d 7	4.0	181	2 BED	8.0	5.5	5.0	10.5	×,
Level 17	A9	176	1 BED	6.0	3.7	5.0	8.8	
		175	2 BED	8.0	5.2	5.0	10.3	~
		174	2 BED	8.0	8.7	5.0	13.7	×,
		173	1 BED	6.0	3.2	5.0	8.2	×,
		172	2 BED	8.0	5.9	5.0	10.9	~ ,
		171	1 BED	6.0	4.3	5.0	9.4	~ ,
Level 16	A8	166	1 BED	6.0	4.0	5.0	9.0	_
		165	2 BED	8.0	5.1	5.7	10.8	~ ,
		164	2 BED	8.0	8.7	5.7	14.3	_
		163	1 BED	6.0	3.2	5.0	8.2	

STO	REY / REFERE	NCE						
Level	Fir code	Apartment No.	Туре	Briefed Area (m3)	In- apartment	Basement	TOTAL	Area Achieveo
		162	2 BED	8.0	6.4	5.7	12.1	
		161	1 BED	6.0	7.3	5.2	12.5	J
Level 15	A7	156	1 BED	6.0	3.6	5.0	8.6	J
		155	1 BED	6.0	4.3	5.0	9.3	Ĵ
		154	2 BED	8.0	5.5	5.0	10.6	Ĵ
		153	1 BED	6.0	4.4	5.0	9.5	J
		152	2 BED	8.0	4.7	5.0	9.8	Ĵ
		151	1 BED	6.0	7.3	5.0	12.4	Ĵ
Level 14	A6	146	1 BED	6.0	3.2	5.0	8.3	J
		145	1 BED	6.0	4.3	5.0	9.3	J
		144	1 BED	6.0	5.3	5.0	10.4	Ĵ
		143	2 BED	8.0	5.4	5.0	10.4	Ĵ
		142	1 BED	6.0	14.4	5.0	19.4	Ĵ
		141	1 BED	6.0	6.9	5.0	12.0	Ĵ
Level 12	A5	126	1 BED	6.0	3.1	5.0	8.1	Ĵ
		125	1 BED	6.0	4.3	5.0	9.3	J
		124	1 BED	6.0	5.6	5.0	10.7	J
		123	2 BED	8.0	5.4	5.0	10.4	J
		122	1 BED	6.0	14.7	5.0	19.8	J
		121	1 BED	6.0	3.9	5.0	8.9	J
Level 11	A4	116	1 BED	6.0	3.2	5.0	8.2	J
Lovor II	,,,,	115	1 BED	6.0	4.3	5.0	9.3	1
		114	1 BED	6.0	5.6	5.0	10.7	
		113	2 BED	8.0	5.4	5.0	10.7	
		112	1 BED	6.0	13.8	5.0	18.9	
		111	1 BED	6.0	5.1	5.0	10.3	
Level 10	A3	106	1 BED	6.0	3.0	5.0	8.1	
Lever TO	AS	105	1 BED	6.0	4.3	5.0	9.3	
		103	1 BED	6.0	5.8	5.0	10.8	
		104	2 BED	8.0	5.6	5.0	10.8	
				1				
		102 101	1 BED 1 BED	6.0 6.0	4.5	5.0 5.0	9.5 8.4	1
Lavel 00	40			1	3.3			
Level 09	A2	096	1 BED	6.0	3.0	5.0	8.1	~
		095	1 BED	6.0	4.3	5.0	9.3	~
		094	1 BED	6.0	5.8	5.0	10.8	~
		093	2 BED	8.0	5.4	5.0	10.4	~
		092	1 BED	6.0	4.5	5.0	9.5	×,
L av al 60		091	1 BED	6.0	3.3	7.0	10.3	×,
Level 08	A1	085	1 BED	6.0	3.9	5.0	8.9	· ~,
		084	1 BED	6.0	5.8	5.0	10.8	×,
		083	2 BED	8.0	6.1	5.0	11.1	~ ,
		082	1 BED	6.0	4.5	5.0	9.5	~ ,
		081	1 BED	6.0	3.3	5.0	8.4	~
Level 06	A0	064	1 BED	6.0	5.4	5.0	10.5	· · ·
		063	1 BED	6.0	3.6	5.0	8.6	,
		062	1 BED	6.0	4.5	5.0	9.5	↓ √
		061	1 BED	6.0	3.3	10.1	13.4	↓ √ ,
Level 05	A00	054	1 BED	6.0	5.4	8.1	13.5	↓ √ ,
		053	1 BED	6.0	3.4	5.0	8.5	↓ √,
		052	1 BED	6.0	4.5	5.0	9.5	√ .
		051	1 BED	6.0	3.3	5.0	8.4	

17.5 Shadow Diagrams - Winter Solstice

star entertainment group the star















17.6 Shadow Diagrams - Equinox

(Equinox shadow diagrams included are based on March 21st, with daylight savings still in effect. September 23rd equinox is pre-daylight savings.)

star entertainment group the star









