STEM SCHOOL
SEARS APPLICATION

BVN

CONTENTS

SEARS APPLICATION

DESIGN TEAM

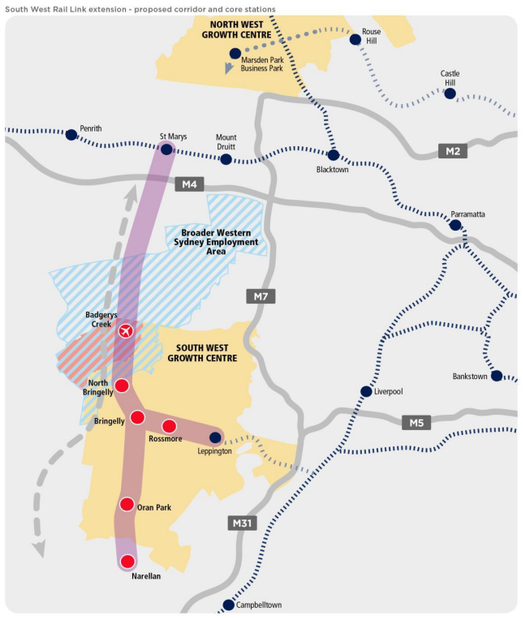
ARCHITECT	BVN
PROJECT MANAGEMENT	Savills
PLANNING	Urbis
STRUCTURE	Enstruct
MECH. + ELEC.	Steenson-Varming
HYDRAULIC + WET FIRE	JHA

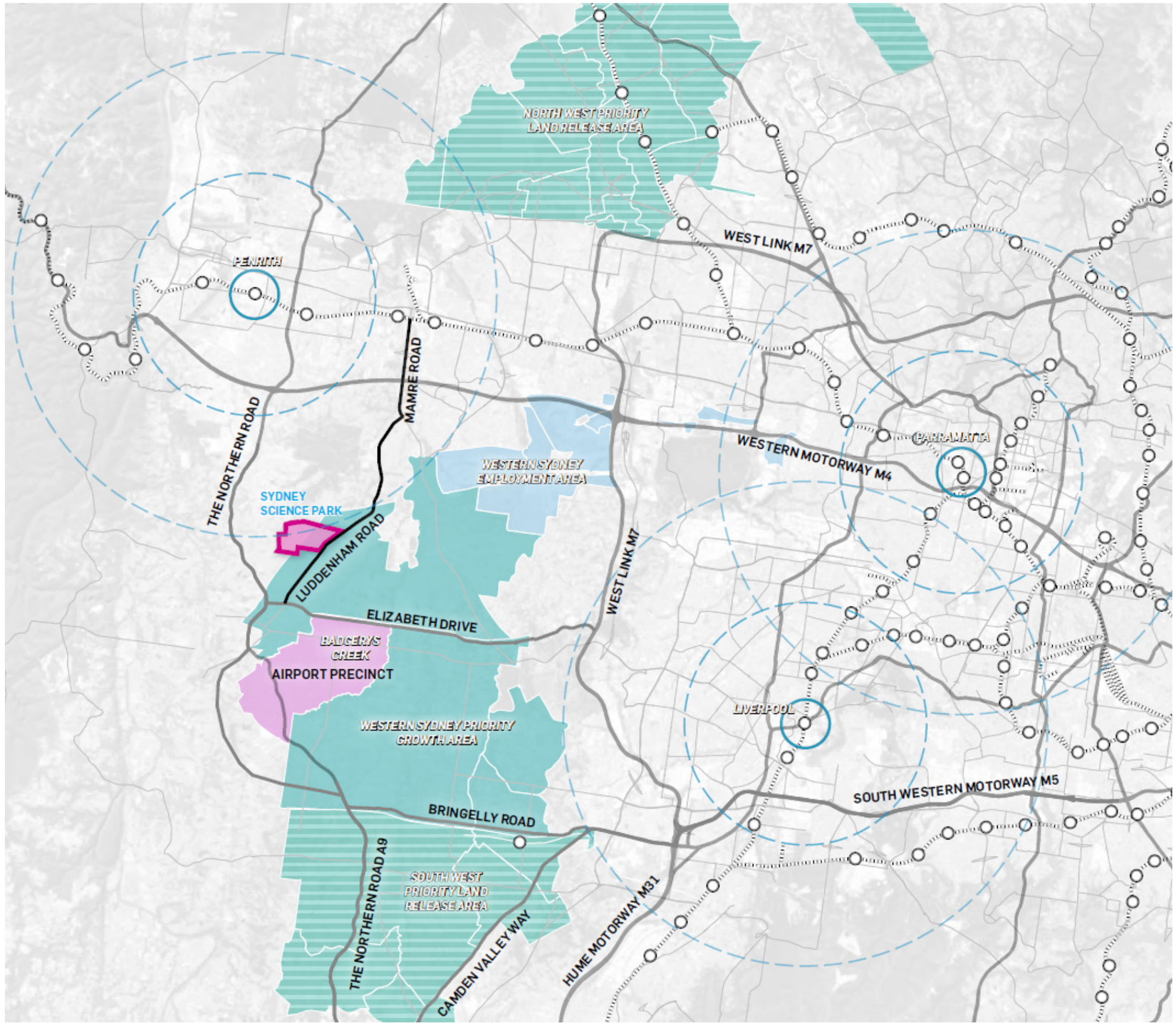
ISSUE	DATE	DESCRIPTION
A	13.04.2018	SEARS application

CONTEXT
REGIONAL CONTEXT

The school will be part of the new 'Sydney Science Park', a 280ha fully integrated community, comprising a town centre, commercial, educational, residential, cultural and recreational spaces. 'Sydney Science Park' represents a new vision to cluster leading science based businesses, tertiary institutions and organisations, research and development in one location. 'Sydney Science Park' will foster innovation and cultural development in science and technology in the context of a vibrant, integrated community. The First Community Precinct will be the inaugural phase of this vision.

'Sydney Science Park' is strategically located in Luddenham; close to Sydney's proposed Badgery's Creek Airport Precinct, and the centre of Sydney's developing 'Western Parkland City'. Approximately 3kms north of the Airport, the site offers easy access to the existing infrastructure of M4 and M7 motorways, and it is within minutes of major town centres; 10 minutes to Penrith, 15 minutes to Liverpool and 20 minutes to Parramatta.

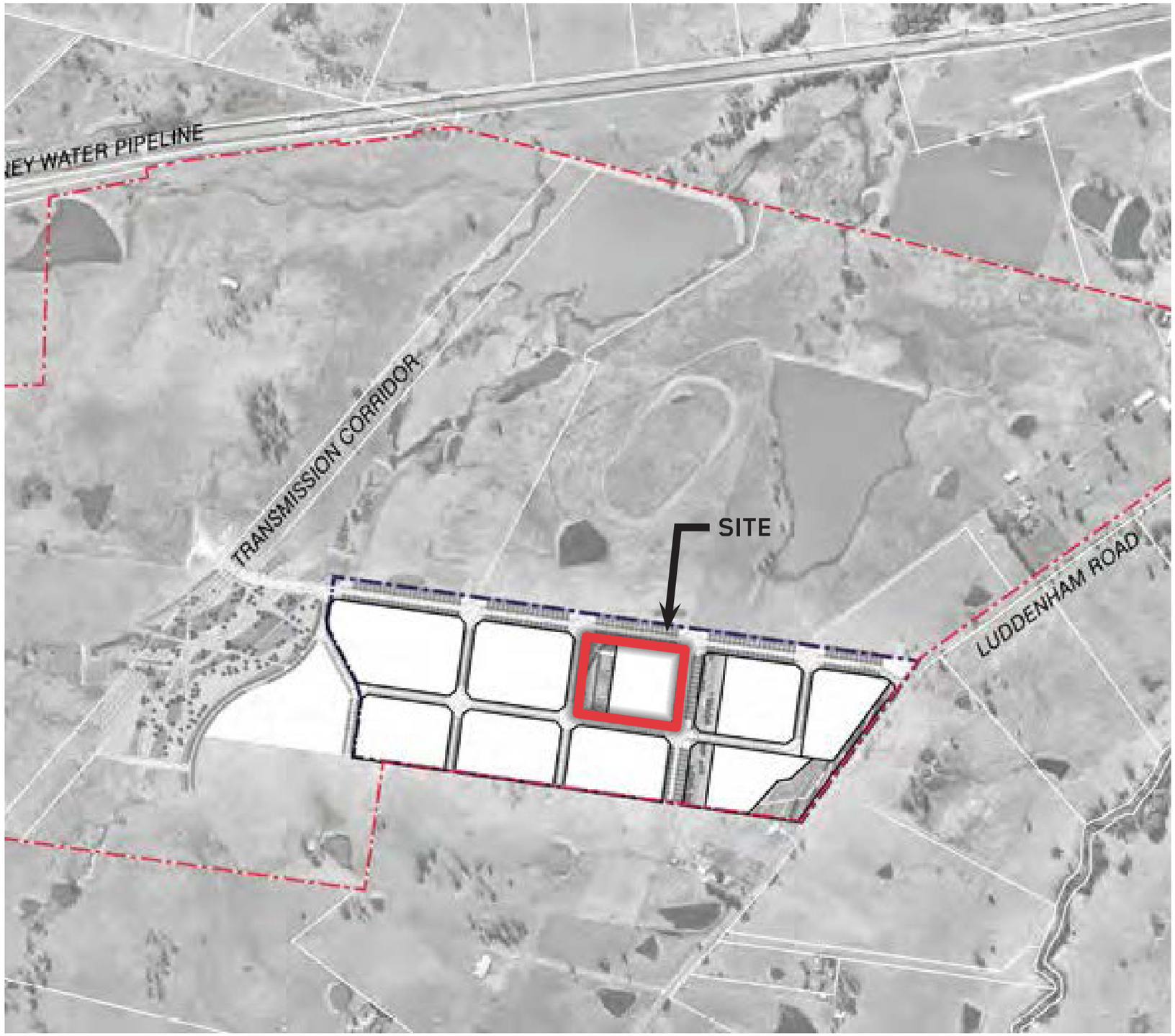




CONTEXT
SYDNEY SCIENCE PARK MASTERPLAN

The site of STEM School is east of and adjacent to the Baiada Research Building; a 30,000sqm commerical research facility due to become operational by 2019.

The site for the school is 2ha, with future options to acquire two additional sites to the south (1.2ha and 1.3ha in size). The school is proposed as a 'Pre-to-Post' School (from preschool to post-schooling options) accomodating up to 2340 students. The school is scheduled to open in 2021, with the full cohort of students expected in 2024.



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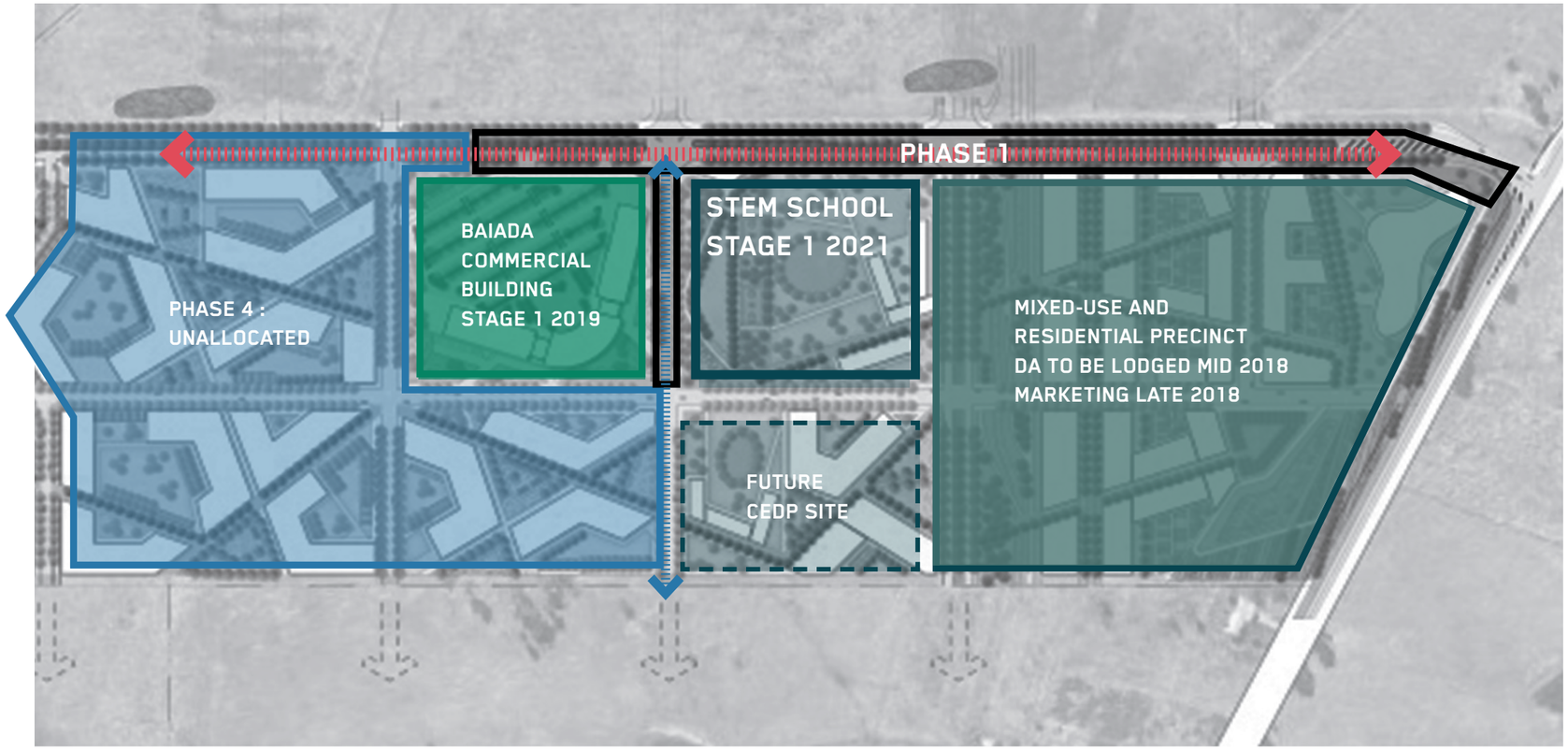
CONTEXT
MASTERPLAN STAGING

Phase 1: Comprises the construction of the boulevard and connector roads that provide primary access to the site. This will provide the opportunity to use the vacant sites on the north of the boulevard for school-associated car parking.

Phase 2/3A/3B: The BAIADA/ commercial building site and Mixed-use Residential Precinct are scheduled for completion prior to the completion of the school in year 2021.

Phase 4: Currently unallocated.



LINKAGES

BOULEVARD ROAD

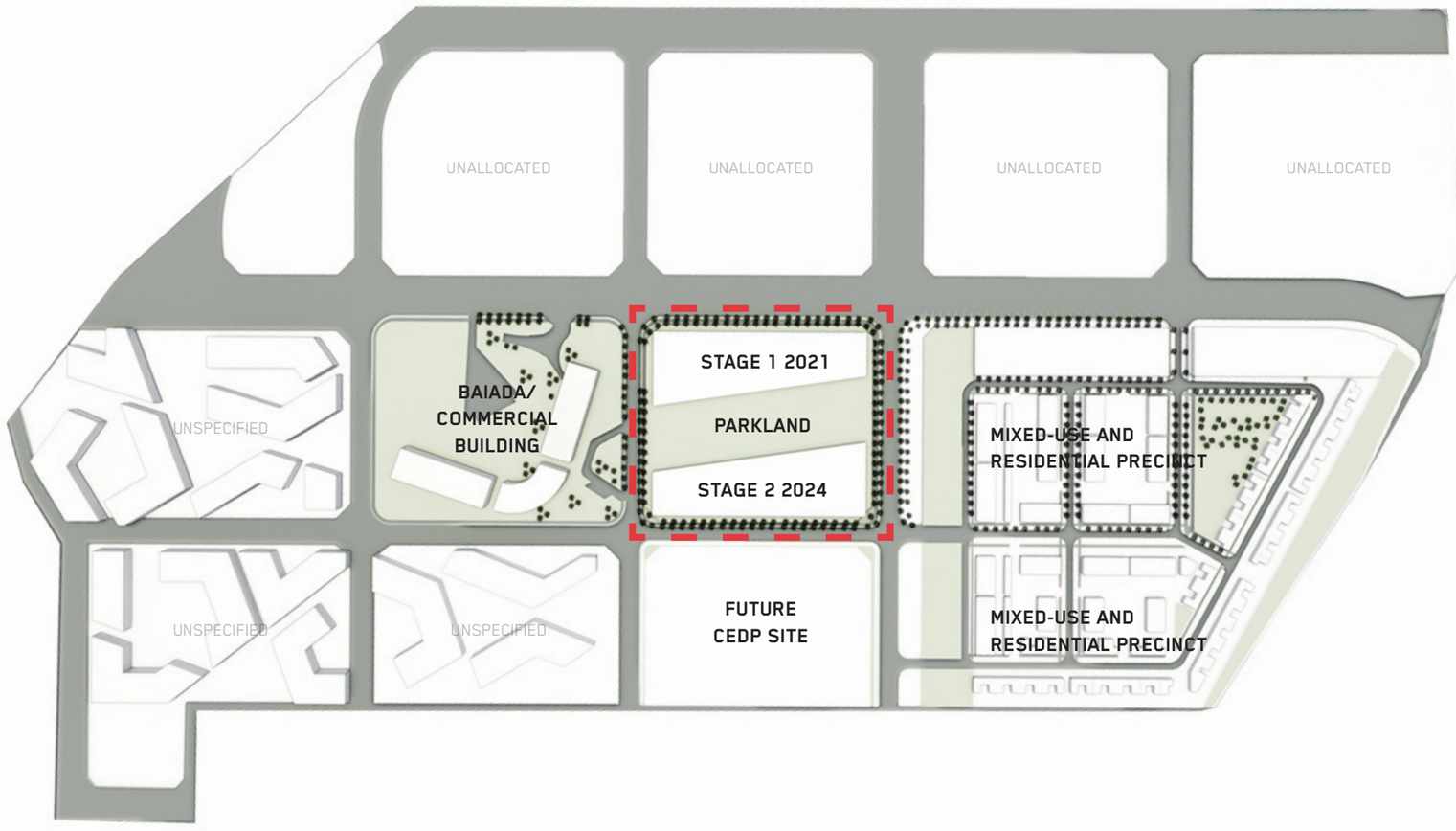
CONNECTOR ROAD

OFF-AXIS MOVEMENT

CONVERGENCE OF TWO ROAD TYPES
ADJACENT TO SCHOOL SITE

PUBLIC OPEN SPACE

CONTEXT
SITE PLAN



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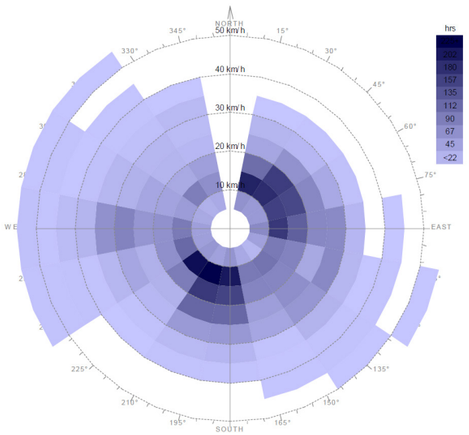
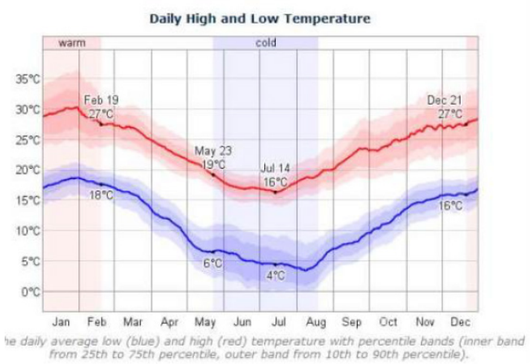
SITE ANALYSIS
WIND & SOLAR

Solar: There is a reasonable shift in sun angles and intensities throughout the year, with lower angles during the winter, and higher angles during the summer. This should be considered when designing solar shading into the facades.

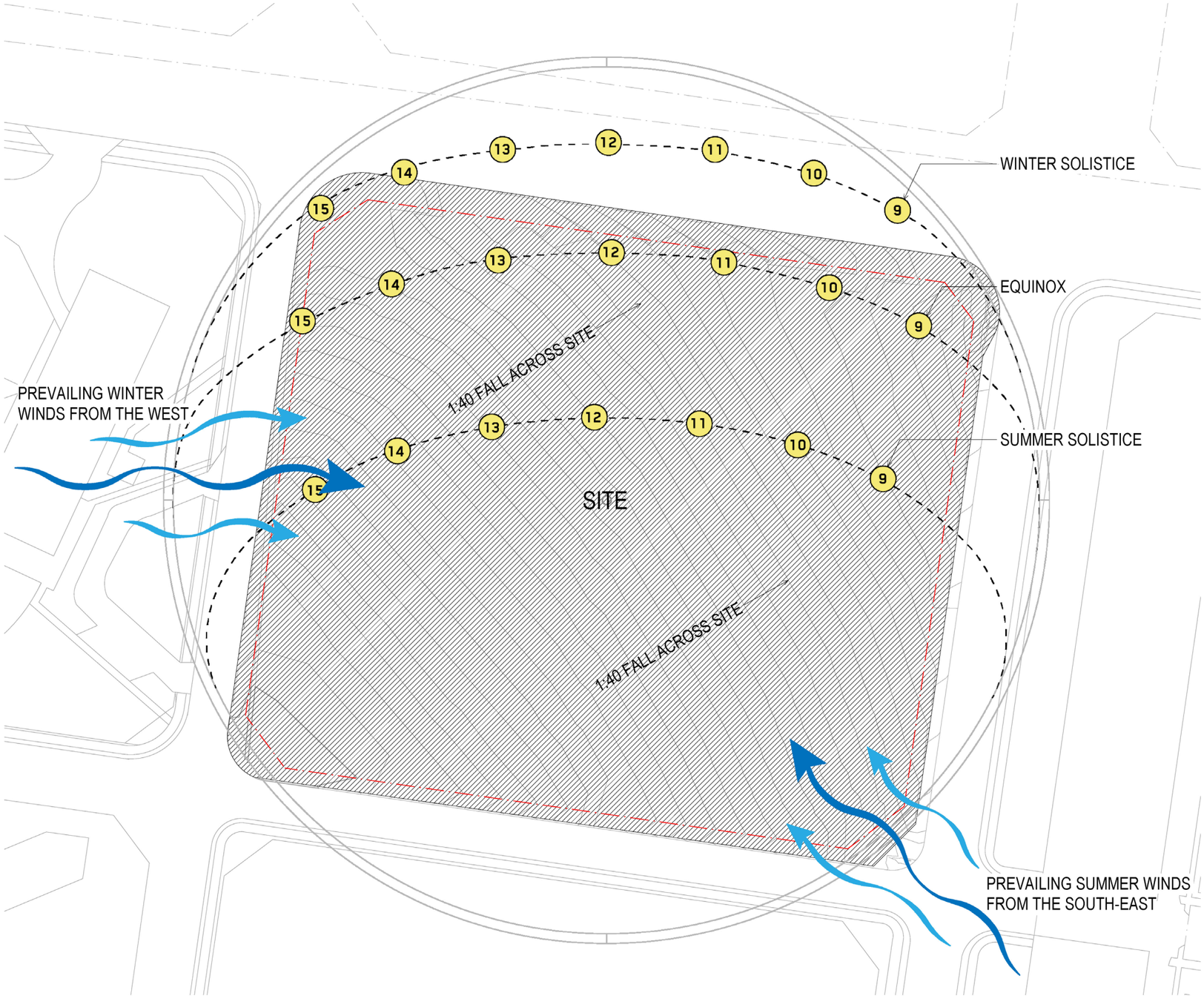
Winds: In summer, when air movement is desirable to help mitigate the high air temperatures, the strongest winds and greatest frequency of wind comes from the South East. In winter, when some level of shelter may be desired when temperatures are cooler, the strongest winds are more commonly from the West.



SSP Annual Wind Direction, Speed, and Frequency



SSP Average High & Low Temperatures Throughout the Year
(source: www.weatherspark.com)



SCHEDULE OF ACCOMODATION
BRIEF

2.4.1 INTRODUCTION

Stage 1 has been distilled into a number of hubs. The concept of the hub was developed in close consultation with CEDP. The hubs include:

1.The Inquiry Hub

The Inquiry Hubs are the home bases for the students. Each hub will house 2 groups of 60 students, and it will be used for day-to-day learning. The Inquiry Hubs will offer a series of learning settings and provide multiple points of focus . This type of space will fufill CEDP's requirements and will allow the students to learn in a collaborative, agile and flexible manner.

2. The Research Hub

The Research Hub consists of a series of labs and seminar space mainly dedicated for Science and Fitness related subjects. The hub offers wet and dry labs, seminar room and workshop spaces - allowing for various type of science and sport sciences related experiments to be carried out.

3. The Creative Hub

The Creative Hub takes the form of a large open workshop space, the provision of this large space facilitates art and fabrication related learning and activites. Support spaces such like spray painting booths, closed workshops and storage are located adjacent to the larger open workshop. Food technology will also be accomodated within this hub and will consist of a commercial kitchen, a learning space and ancillary support facilities.

4. The Performance Hub

The Performance Hub is located at the eastern end of the school. This hub consists of a multipurpose hall that will comfortably accomodate 500 people for gathering and events. It is intended that the seating capacity could be increased by incorporating the seating in an external amphitheatre. The hub also houses a movement studio and learning spaces related to Music, Dance and Drama.

5. The Community Hub

The Community Hub forms the link between the Performance Hub and the Inquiry Hub. It is intended that this area is a welcoming destination and linkage point. To facilitate this aim the co-working space and cafe are located within this Hub.

CONCEPT DESIGN

SPACE		AREA	NUMBER	TOTAL M2
INQUIRY HUB				
GF	YR 11-12	223	5	1115
	ADMIN CLERICAL	237	1	237
	STUDENT RECEPTION	17	1	17
	MEETING	34.5	1	34.5
	PRINCIPALS OFFICES	39	1	39
	CLINICS	12	2	24
	DEPUTY PRINCIPALS	34	1	34
	PRINCIPAL SECRETARY	15	1	15
	ATRIUM	889	1	889
	AMENITIES	135	1	135
				0
1F	YR 5-6	223	6	1338
	AMENTITIES	110	2	220
	ADDITIONAL ROOM AREA	110	2	220
	BRIDGE CONNECTION TBC	110	2	220
2F	YR 7-8	223	6	1338
	AMENTITIES	110	2	220
	ADDITIONAL ROOM AREA	110	2	220
	BRIDGE CONNECTION TBC	110	2	220
TOTAL				6536

SPACE		AREA	NUMBER	TOTAL M2
CREATIVE/RESEARCH HUB BUILDING				
GF	STAFF	424	1	424
	LECTURE THEATRE	334.46	1	334.46
	SEMINAR ROOM	112	1	112
	SUBSTATION	63	1	63
	AMENITIES	12	1	12
	FOYER ENTRY AREA	TBA	1	
				0
1F	**FOOD TECH**			0
	DOMESTIC KITCHEN	207.00	1	207
	GLA	127.00	1	127
	KITCHEN PREP	42.00	1	42
	STORAGE	24.00	1	24
	CREATIVE		1	0
	ART WORKSHOP	89.00	1	89
	RAW MATERIAL STORAGE	50.00	1	50
	PROJECT STORAGE	69.00	1	69
	FABRICATION WORKSHOP	132	1	132
	CREATIVE HUB	587	1	587
				0
2F	**RESEARCH**			0
	CHEMICAL STORE	43	1	43
	SCIENCE PREP			0
	WET LAB	134.5	3	403.5
	DRY LAB	72	3	216
	FITNESS WORKSHOP	123	1	123
	FITNESS STORE	34	1	34
ROOF	GREENHOUSE	TBA		
TOTAL				3092.0

SPACE		AREA	NUMBER	TOTAL M2
PERFORMANCE HUB BUILDING				
GF	HALL	357	1	357
	CAFÉ/CO-WORKING	500	1	500
	PLANT	184	1	184
	STORE	105	1	105
	CHANGE	35	1	35
	AMENTITIES	46	1	46
	REAR ENTRY AREA	96	1	96
				0
1F	PRACTICE ROOM	23	3	69
	MUSIC DANCE DRAMA WORKSHOP	241	1	241
	GENERAL LEARNING SPACE	64	1	64
	MOVEMENT STUDIO	174	1	174
	STORE	55	1	55
TOTAL				1926

Note: additional area for plant

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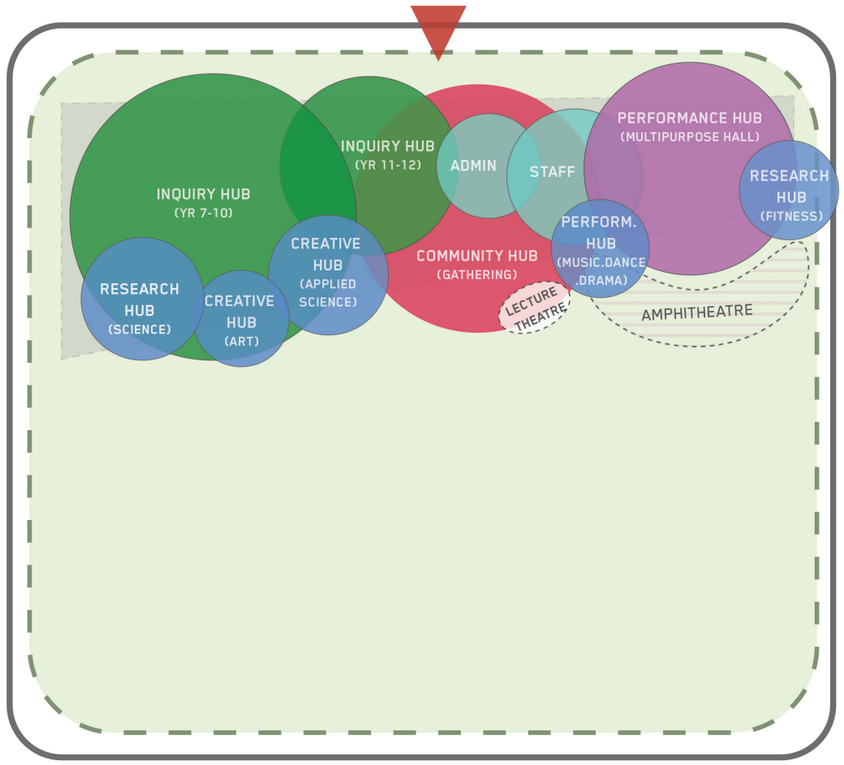
SCHEDULE OF ACCOMODATION
STAGING

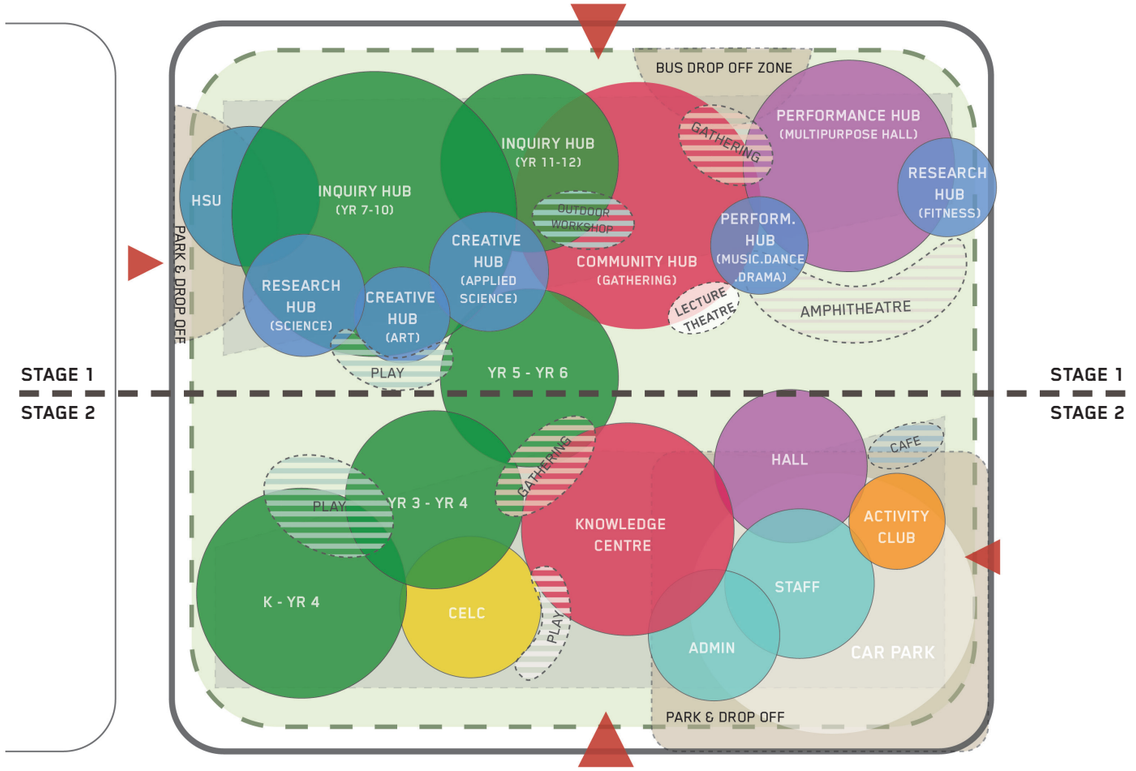


STAGE 1 SITE PLAN (2021)

Stage 1 building mass is located on north part of the site.It is intended that Stage 1 will provide both general and specialist learning spaces for Years 7-12.

The site plan indicates the hubs that make up the overall school. The inquiry hub, the performance hub, the research hub, the creative hub and the community hub. These are described in detail further within this document.

It is intended that the staff and admin areas are temporarily located wtihin Stage 1 before finding their permanent home in Stage 2.



STAGE 2 SITE PLAN

Stage 2 building mass is located on South part of the site. it is intended that Stage 2 provides learning spaces for K-year 6 in addition to specialist areas including a high support unit (HSU) and early learning centre (CELC).

This part of the overall school will also integrate with the community and provide spaces that could have dual usage, such as the knowledge centre. It is envisaged that Stage 1 and Stage 2 will be physcially connected to allow for a dynamic flow from years 5-6 to 7-8 and to reflect CEDP's pedagogy and grouping models.

CONCEPT
PRECINCT SITE PLAN

TRUE NORTH

PROJECT NORTH

1:2000 @ A3

LEGEND

RESEARCH HUB	
COMMUNITY HUB	
INQUIRY HUB	
PERFORMANCE HUB	
ADMINISTRATION	

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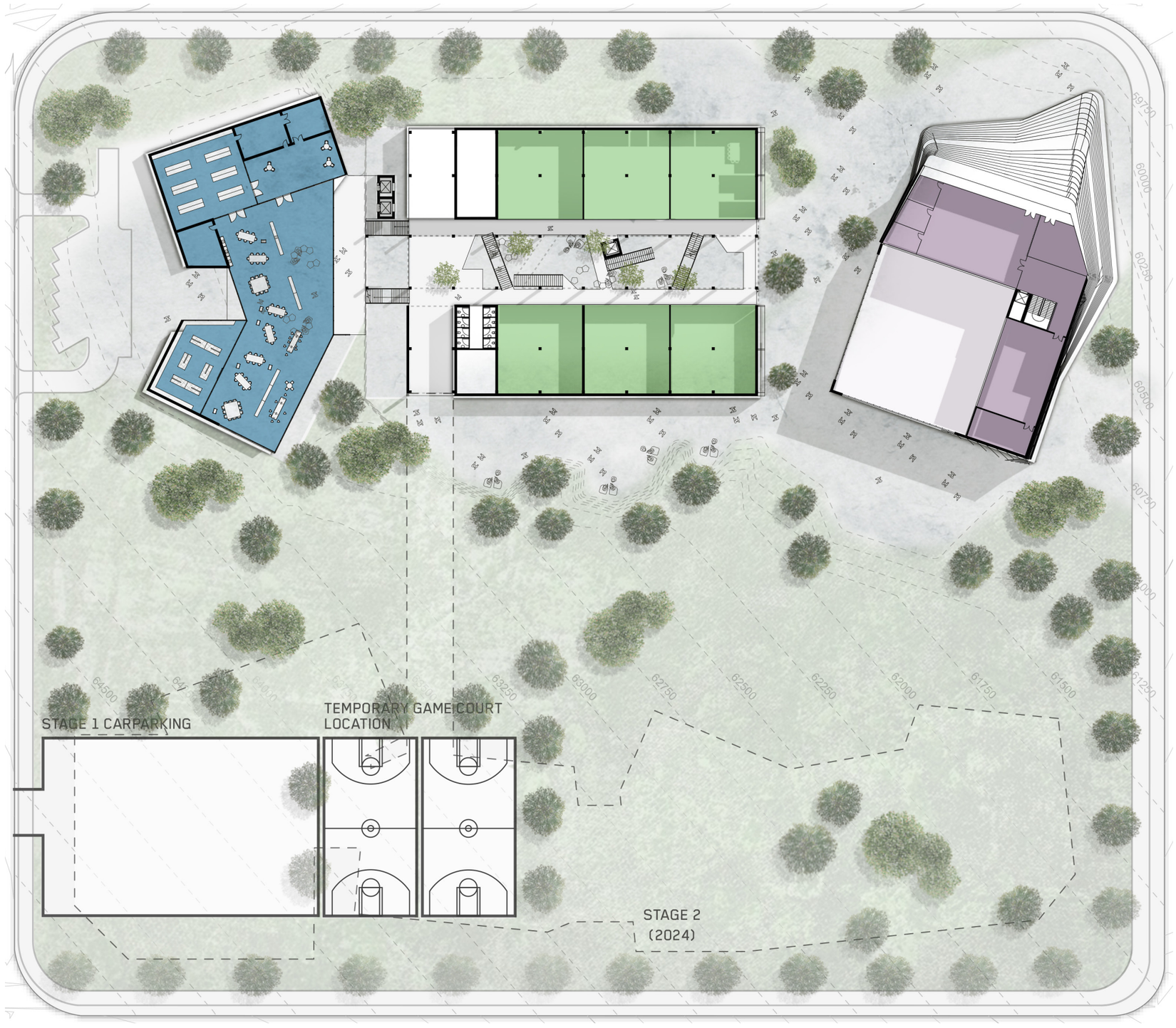
CONCEPT
SITE PLAN



TRUE NORTH

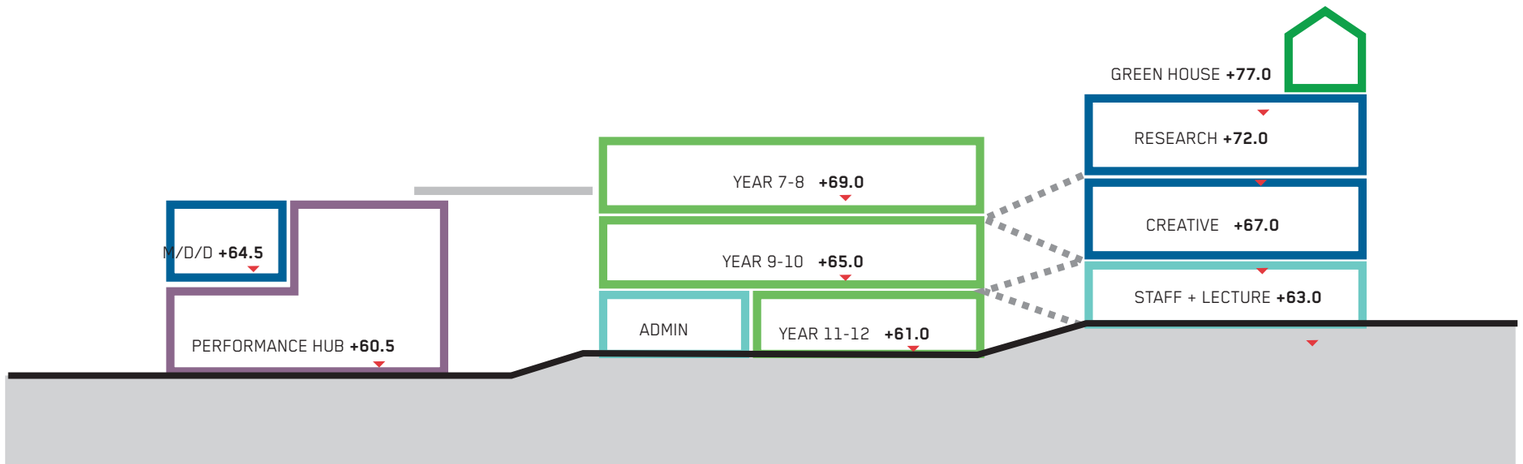
PROJECT NORTH

1:750 @ A3

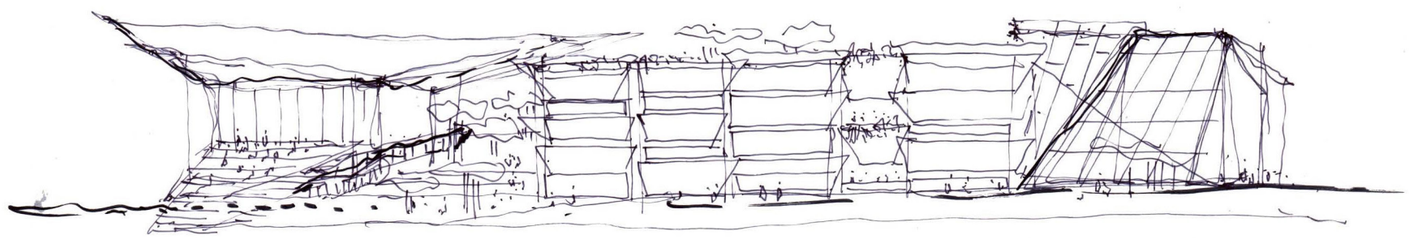
LEGEND

RESEARCH HUB
COMMUNITY HUB
INQUIRY HUB
PERFORMANCE HUB
ADMINISTRATION

CONCEPT
SECTION



FLOOR LEVELS



CONCEPT ELEVATION

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