



# NORTH WEST **cambridge**

## Development Densification Study

High-Level Social  
Infrastructure Appraisal

March 2021

## **INTRODUCTION AND PURPOSE OF THIS DOCUMENT**

This desktop study has been put together to support a representation to the Greater Cambridge Shared Planning Service Local Plan review, 2021.

The numbers quoted herein are purely indicative, based on a high-level analysis of plot capacity study for the site.

The study represents a high-level appraisal of the potential opportunities and constraints of the North-West Cambridge Development in terms of potential increase in dwelling out-turn from the site and its relationship with on-site social infrastructure to inform discussions related to the preparation of the new Local Plan.

The numbers and mix indicated are not a formal development proposal and should only be used for the stated purpose. They have not been subject to detailed utilities or road infrastructure studies, or a detailed business case analysis.

This document should be read alongside the other suite of documents which constitute the University's submission to the Local Plan review.



The table below is based on high level plot capacity testing, to establish/reinforce whether increased capacity within the NWCD site is feasible from a spatial constraint perspective. The figures below and overleaf are purely indicative to enable greater confidence in the approximate number of dwellings being considered, and promote further dialogue, engagement and investigation as part of the Local Plan review.

The numbers do not constitute a development proposal, and are subject to considerable further interrogation.

Calculations for population, child yield, and rudimentary demand for social infrastructure.  
Assumes averages per dwelling size and tenure (ratios extrapolated from original ES details re average population data, updated by County Council Comments on Mill Road application 17/2245/FUL)

Unit Size	Average Household size	Early Years	Primary	Secondary	16-18 yrs
<b>Market Housing</b>					
1 bed	1.5	0	0	0	0
2 bed	1.5	0.1	0.05	0	0
3 bed	2.55	0.2	0.2	0.15	0.08
4+ bed	3.3	0.35	0.4	0.3	0.14
<b>Social Housing</b>					
1 bed	1.7	0	0	0	0
2 bed	1.7	0.4	0.15	0	0
3 bed	3.6	0.6	0.8	0.4	0.08
4+ bed	5.4	0.7	1.2	0.9	0.14
<b>KWH (based on OPP ES Figures) ~</b>					
1 bed	1.49	0	0	0	0
2 bed (no children)	1.82	0	0	0	0
2 bed (with children)	3.44	0.675	0.525	0.035	0.075
3 bed (with children)	3.65	0.64	0.56	0.25	0.15
3 bed (other)	2.01	0	0	0	0
4 bed (with children)	4.09	0.535	0.59	0.475	0.16
4 bed (other)	2.7	0	0	0	0
4 bed (HMO)	4	0	0	0	0

~ Taken as 50/50 average of Table 5.1 & Table 5.2 of the ES to be consistent with ES  
Boxes highlighted yellow are updates on projected child yields based on recent planning decisions by CCC

Projected Total Yields (based on OPP ES Assumptions - table 5.4)						
Unit Size	Projected Mix	Projected Population	Early Years	Primary	Secondary	16-18 yrs
<b>Market Housing</b>						
1 bed	240	360	0	0	0	0
2 bed	555	832.5	55.5	27.75	0	0
3 bed	380	969	76	76	57	30.4
4+ bed	325	1072.5	113.75	130	97.5	45.5
<b>Sub Total</b>	<b>1500</b>	<b>3234</b>	<b>245.25</b>	<b>233.75</b>	<b>154.5</b>	<b>75.9</b>
<b>Social Housing</b>						
1 bed		0	0	0	0	0
2 bed		0	0	0	0	0
3 bed		0	0	0	0	0
4+ bed		0	0	0	0	0
<b>Sub Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>KW Housing#</b>						
1 bed	645	961.05	0	0	0	0
2 bed (no children)	410	746.2	0	0	0	0
2 bed (with children)	175	602	118.125	91.875	6.125	13.125
3 bed (with children)	150	547.5	96	84	37.5	22.5
3 bed (other)	40	80.4	0	0	0	0
4 bed (with children)	20	81.8	10.7	11.8	9.5	3.2
4 bed (other)	10	27	0	0	0	0
4 bed (HMO)	50	200	0	0	0	0
<b>Sub Total</b>	<b>1500</b>	<b>3245.95</b>	<b>224.825</b>	<b>187.675</b>	<b>53.125</b>	<b>38.825</b>
<b>Student</b>		<b>2000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Senior Care</b>		<b>100</b>				
<b>Sub Total (Less Students)</b>		<b>6579.95</b>				
<b>Totals</b>	<b>3000</b>	<b>8579.95</b>	<b>470.075</b>	<b>421.425</b>	<b>207.625</b>	<b>114.725</b>

Existing MP Requirements (as at time of OPP ES)	Space	Notes
Health Services (sqm)	511.7738889	This figure needs to round to division of 140sqm
Early Yrs (sqm)	1410.225	
Primary (FE)	2.006785714	Need to reprofile yields calculator - this number is lower than agreed ES
Secondary (FE)	1.384166667	
6th Form		not found a multiplier for this. Not strictly a policy confirmed ask
Community Space (sqm)	460.5965	
Library Space (sqm)	197.3985	
Outdoor Sport (ha)	78.9594	
Indoor Sport	0.50615	No of sports halls (or part thereof)
Swimming Pool		No of swimming pools (or part thereof)
Informal Open Space (ha)	15.44391	
Allotments (ha)	2.63198	
Play space (ha)	1.973985	
Police		0 No longer being taken up

Projected totals - Scenario (50:50 original 3k, 60:40 on uplift in favour market - purely example)						
Unit Size	Projected Mix	Projected Population	Early Years	Primary	Secondary	16-18 yrs
<b>Market Housing</b>						
1 bed	735	1102.5	0	0	0	0
2 bed	978	1467	97.8	48.9	0	0
3 bed	367	935.85	73.4	73.4	55.05	29.36
4+ bed	366	1207.8	128.1	146.4	109.8	51.24
<b>Sub Total</b>	<b>2446.000</b>	<b>4713.15</b>	<b>299.3</b>	<b>268.7</b>	<b>164.85</b>	<b>80.6</b>
<b>Social Housing</b>						
1 bed	132	224.4	0	0	0	0
2 bed	139	236.3	55.6	20.85	0	0
3 bed	25	90	15	20	10	2
4+ bed	19	102.6	13.3	22.8	17.1	2.66
<b>Sub Total</b>	<b>315</b>	<b>653.3</b>	<b>83.9</b>	<b>63.65</b>	<b>27.1</b>	<b>4.66</b>
<b>KW Housing</b>						
1 bed	820	1221.8	0	0	0	0
2 bed (no children)	510	928.2	0	0	0	0
2 bed (with children)	383	1317.52	258.525	201.075	13.405	28.725
3 bed (with children)	94	343.1	60.16	52.64	23.5	14.1
3 bed (other)		0	0	0	0	0
4 bed (with children)		0	0	0	0	0
4 bed (other)		0	0	0	0	0
4 bed (HMO)	8	32	0	0	0	0
<b>Sub Total</b>	<b>1815</b>	<b>3842.62</b>	<b>318.685</b>	<b>253.715</b>	<b>36.905</b>	<b>42.825</b>
<b>Student</b>		<b>2000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Senior Care</b>						
<b>Sub Total (Less Students)</b>		<b>9209.07</b>				
<b>Totals</b>	<b>4576</b>	<b>11209.07</b>	<b>701.885</b>	<b>586.065</b>	<b>228.855</b>	<b>128.085</b>

MP Projected Requirements (based upon revised latest MP mix)	Space	Notes
Health Services (sqm)	716.261	This figure needs to round to division of 140sqm
Early Yrs (sqm)	2105.655	
Primary (FE)	2.790785714	See comment in relative MP infra table - formula needs review
Secondary (FE)	1.5257	Expect similar issue for
6th Form		not found a multiplier for this. Not strictly a policy confirmed ask
Community Space (sqm)	644.6349	
Library Space (sqm)	276.2721	
Outdoor Sport (ha)	110.50884	
Indoor Sport	0.70839	No of sports halls (or part thereof)
Swimming Pool	0.1841814	No of swimming pools (or part thereof)
Informal Open Space (ha)	20.176326	
Allotments	3.683628	
Play space	2.762721	
Police		0 No longer being taken up

**Surplus/Deficit Tracker**

Current Provision secured via existing OPP		
	Space	Notes
Health Services (sqm)		700 provides for 5 GPs
Early Yrs		994 further 1000sqm allowance in remaining phases
Primary		3 provides 3FE, on 2.74ha site (building 3760sqm)
Secondary		1.57 contribution made for offsite provision No contribution required by County previously based on
6th Form		113 capacity in system
Community Space		787 includes 71sqm shared with nursery
Library Space	197.3985	£35.60
Outdoor Sport (ha)	6.98	
		Previously this was defined as creating access for public to
Indoor Sport		0 WC Sports Centre
Swimming Pool	0.131599	2606402.784
Informal Open Space (ha)	53.64	
Allotments (ha)	2.6	
Play space (ha)	1.62	
Police		200 not being taken for intended purpose, now repurposed

Projected Requirements based on indicative mix/model from high level plot capacity studies		
		Note, this figure needs to be rounded up or down to
Health Services (sqm)	716.261	multiples of 140sqm, by negotiation with LHA
Early Yrs (sqm)	2105.655	
Primary (FE)	2.790785714	
Secondary (FE)	1.5257	
6th Form		Need to find CCC calculator for 6th form
Community Space (sqm)	644.6349	
Library Space (sqm)	276.2721	
Outdoor Sport (ha)	11.050884	
Indoor Sport	0.70839	No of sports halls (or part thereof)
Swimming Pool	0.1841814	No of swimming pools (or part thereof)
Informal Open Space (ha)	24.659954	New LP increased demand to 2.2ha per 1000 people (from 1.8)
Allotments	3.683628	
Play space	2.762721	
Police		0 No longer being taken up

Surplus/deficits	Space in sqm	Notes
Health Services (sqm)	-16.261	
Early Yrs	-1111.655	actual deficit lower - based on space yet to be delivered.
Primary	0.209214286	Driven by projected child yields for KWH from ES, scaled up for demonstration purposes only
Secondary	0.0443	
6th Form	113	
Community Space	142.3651	
Library Space	-78.8736	-£2,800.01
Outdoor Sport	-4.070884	
		Would need discussion re WC sports centre and
Indoor Sport	-0.70839	other uplift opportunities
Swimming Pool	-0.0525824	-£135,138.61
Informal Open Space	28.980046	
Allotments	-1.083628	
Play space	-1.142721	
Police	200	

# OPEN SPACE PROVISION - HIGH LEVEL ANALYSIS



An open space provision calculation and comparison is provided in the following pages.

This study seeks to demonstrate at a high level the degree of relative flexibility within the open land provision on site, and how this might be adapted to fit a densified scheme whilst preserving the Green Belt principles previously adopted.

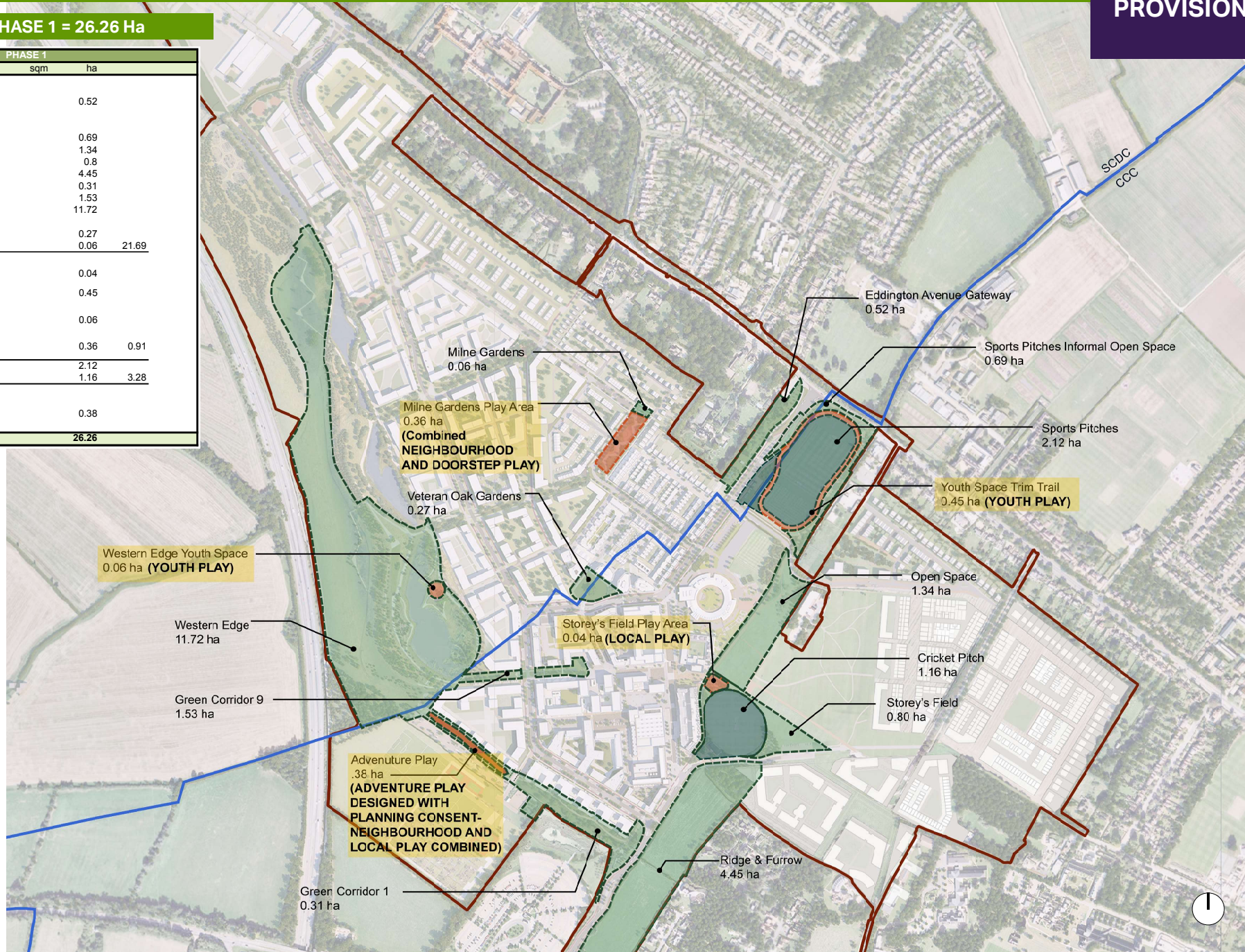


# OPEN SPACE PROVISION

AS BUILT-  
PHASE 1  
OPEN LAND  
PROVISION

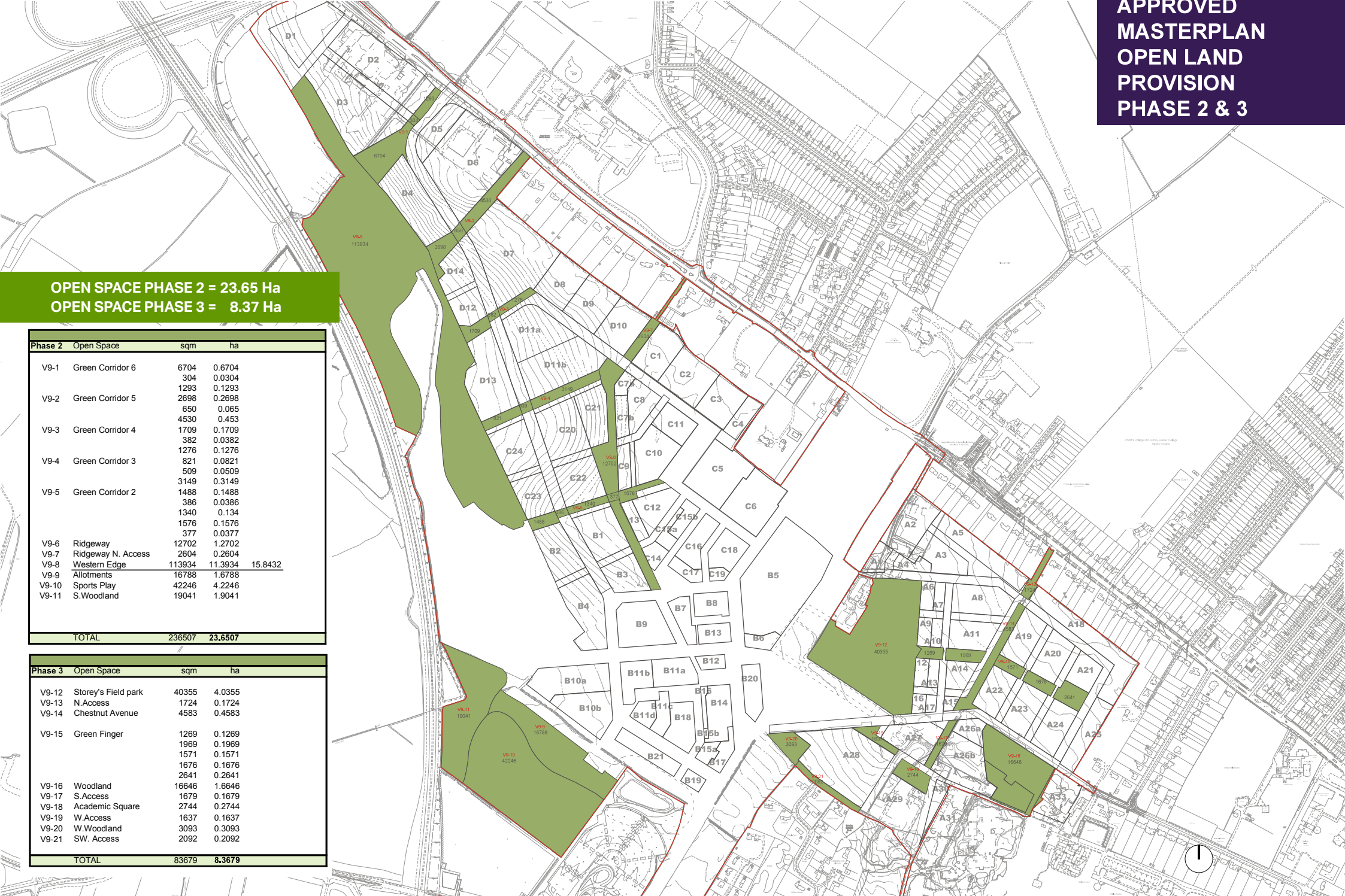
OPEN SPACE PHASE 1 = 26.26 Ha

PHASE 1		
Phase 1	Open Space	ha
Open space	Eddington Avenue Gateway	0.52
	Sports Pitches	
	Informal Open Space	0.69
	Open Space	1.34
	Storey's Field	0.8
	Ridge & Furrow	4.45
	Green Corridor 1	0.31
	Green Corridor 9	1.53
	Western Edge	11.72
	Veteran Oak Gardens	0.27
Play	Milne Gardens	0.06
	Storey's Field Play Area	0.04
	Youth Space Trim Trail	0.45
	Western Edge Youth Space	0.06
Sports	Milne Gardens Play Area	0.36
	Sports Pitches	2.12
	Cricket Pitch	1.16
Planning Consent Only	Adventure Play	0.38
	<b>TOTAL</b>	<b>26.26</b>





# APPROVED MASTERPLAN OPEN LAND PROVISION PHASE 2 & 3



**OPEN SPACE PHASE 2 = 23.65 Ha**  
**OPEN SPACE PHASE 3 = 8.37 Ha**

Phase 2	Open Space	sqm	ha
V9-1	Green Corridor 6	6704	0.6704
		304	0.0304
		1293	0.1293
V9-2	Green Corridor 5	2698	0.2698
		650	0.065
		4530	0.453
V9-3	Green Corridor 4	1709	0.1709
		382	0.0382
		1276	0.1276
V9-4	Green Corridor 3	821	0.0821
		509	0.0509
		3149	0.3149
V9-5	Green Corridor 2	1488	0.1488
		386	0.0386
		1340	0.134
V9-6	Ridgeway	1576	0.1576
		377	0.0377
		12702	1.2702
V9-7	Ridgeway N. Access	2604	0.2604
		113934	11.3934
V9-8	Western Edge	11.3934	15.8432
V9-9	Allotments	16788	1.6788
V9-10	Sports Play	42246	4.2246
V9-11	S.Woodland	19041	1.9041
<b>TOTAL</b>		<b>236507</b>	<b>23.6507</b>

Phase 3	Open Space	sqm	ha
V9-12	Storey's Field park	40355	4.0355
V9-13	N.Access	1724	0.1724
V9-14	Chestnut Avenue	4583	0.4583
V9-15	Green Finger	1269	0.1269
		1969	0.1969
		1571	0.1571
		1676	0.1676
V9-16	Woodland	2641	0.2641
		16646	1.6646
		1679	0.1679
V9-17	S.Access	1679	0.1679
V9-18	Academic Square	2744	0.2744
V9-19	W.Access	1637	0.1637
V9-20	W.Woodland	3093	0.3093
V9-21	SW. Access	2092	0.2092
<b>TOTAL</b>		<b>83679</b>	<b>8.3679</b>

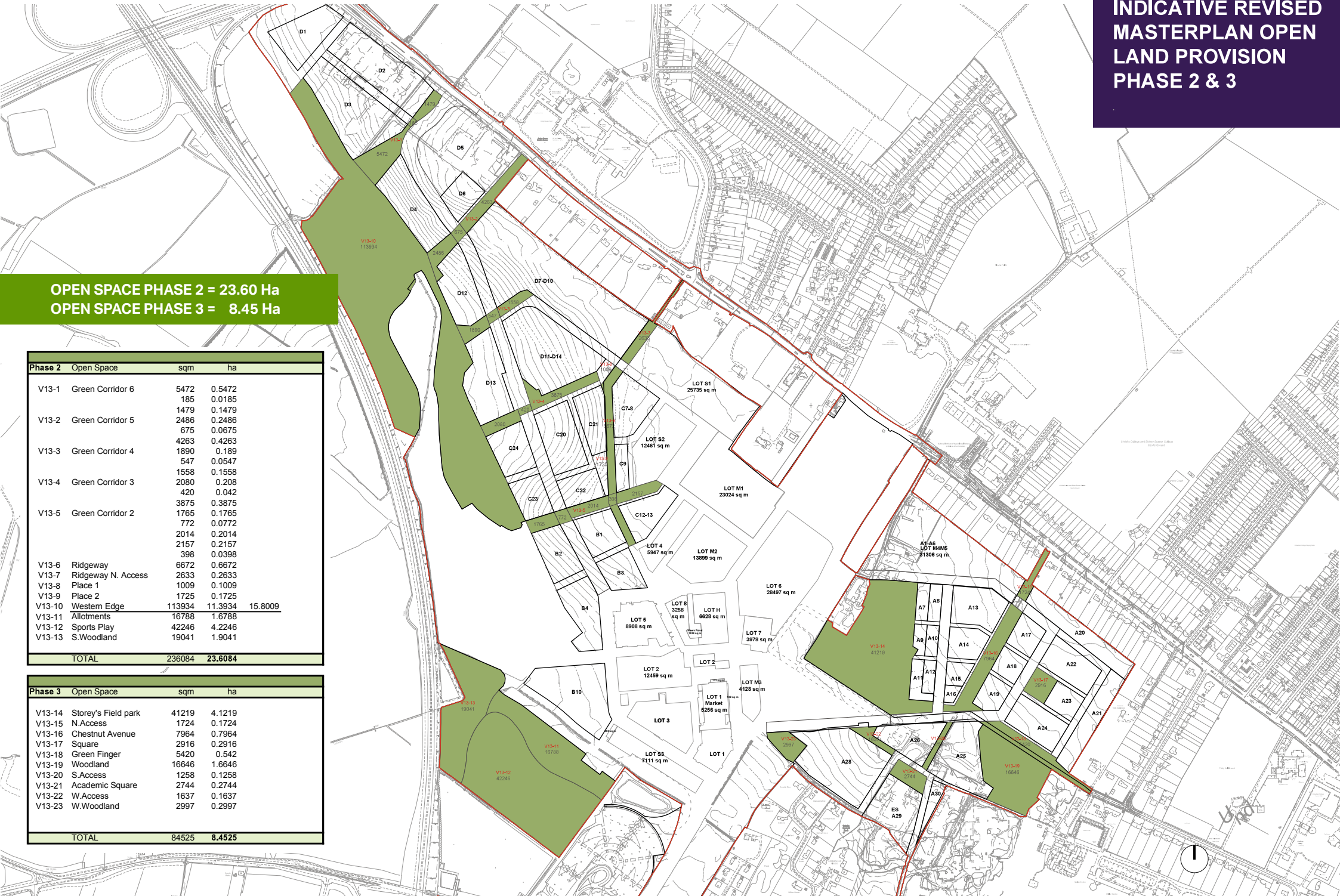


**INDICATIVE REVISED  
MASTERPLAN OPEN  
LAND PROVISION  
PHASE 2 & 3**

**OPEN SPACE PHASE 2 = 23.60 Ha**  
**OPEN SPACE PHASE 3 = 8.45 Ha**

Phase 2	Open Space	sqm	ha
V13-1	Green Corridor 6	5472	0.5472
		185	0.0185
		1479	0.1479
V13-2	Green Corridor 5	2486	0.2486
		675	0.0675
		4263	0.4263
V13-3	Green Corridor 4	1890	0.189
		547	0.0547
		1558	0.1558
V13-4	Green Corridor 3	2080	0.208
		420	0.042
		3875	0.3875
V13-5	Green Corridor 2	1765	0.1765
		772	0.0772
		2014	0.2014
V13-6	Ridgeway	2157	0.2157
		398	0.0398
		6672	0.6672
V13-7	Ridgeway N. Access	2633	0.2633
V13-8	Place 1	1009	0.1009
V13-9	Place 2	1725	0.1725
V13-10	Western Edge	113934	11.3934
V13-11	Allotments	16788	1.6788
V13-12	Sports Play	42246	4.2246
V13-13	S.Woodland	19041	1.9041
<b>TOTAL</b>		<b>236084</b>	<b>23.6084</b>

Phase 3	Open Space	sqm	ha
V13-14	Storey's Field park	41219	4.1219
V13-15	N.Access	1724	0.1724
V13-16	Chestnut Avenue	7964	0.7964
V13-17	Square	2916	0.2916
V13-18	Green Finger	5420	0.542
V13-19	Woodland	16646	1.6646
V13-20	S.Access	1258	0.1258
V13-21	Academic Square	2744	0.2744
V13-22	W.Access	1637	0.1637
V13-23	W.Woodland	2997	0.2997
<b>TOTAL</b>		<b>84525</b>	<b>8.4525</b>





# HIGH LEVEL CONCLUSIONS - FOR DISCUSSION

## High Level Schedule - ratios scaled using Existing OPP as base assumption

Surplus/deficits	Space in sqm	Notes
Health Services (sqm)	-16.261	
Early Yrs	-1111.655	actual deficit lower - based on space yet to be delivered. Extra 1000sqm is committed in the current OPP
Primary	0.209214286	Showing 0.2 FE surplus. Largely a product of higher percentage market at circa 70% 1 and 2 bed units Not sure how this can be in surplus. Needs a sanity check.
Secondary	0.0443	
6th Form	113	Ignore – this hasn't been calibrated
Community Space	142.3651	
Library Space	-78.8736	
Outdoor Sport	-4.070884	
Indoor Sport	-0.70839	
Swimming Pool	-0.0525824	
Informal Open Space	33.463674	
Allotments	-1.083628	
Play space	-1.142721	
Police	200	

## Main highlights:

- Existing Primary school has potential capacity for circa 4500 dwellings, depending upon mix – although more scenario testing would be expected to check for resilience.
- Outdoor sport is in deficit by circa 4ha, although some of this is legacy built into the OPP made up by provision of All Weather facilities
- Allotments provision would need to increase by circa 1ha, and
- Outdoor play would need to increase by circa 1.1ha

## Key areas that would need to be explored to identify absolute site capacity through detailed planning:

- Outdoor Sports: intensification of the usage capacity of existing on site provision for example change to all-weather and/or floodlit. Alternative options of investment outside the site (West Cambridge Sports Centre area?)
- Allotments: explore potential of significant surplus of informal open space to service this demand
- Outdoor play: explore within informal open space and/or within development parcels, as per current strategy