

April 2017

**North Essex Local Plans
(Section 1)
Viability Assessment**

Appendices

Appendices

- 1.0 West of Braintree Assumptions & Appraisal
- 2.0 Colchester Braintree Borders Assumptions & Appraisal
- 2.0 Tendring Colchester Borders Assumptions & Appraisal

Appendix 1: West of Braintree Assumptions & Appraisal

The following worksheets present:

- Land Use breakdown
- Strategic Cost & Other Assumptions
- Site Specific Costs, Values & Assumptions
- Full Scheme Appraisal

The appraisal illustrates the modelling for the following scenario:

- 30% Affordable housing, of which 80% Affordable Rent and 20% Shared Ownership
- 5% Cost uplift (contingency)
- 5% Value uplift (premium over base residential values)

All other appraisals are based upon a constant basis, with amendments to the residential values and cost contingency assumptions.

LANDUSE ASSUMPTIONS

West of Braintree

30% Affordable Housing (80:20 AR:SO)

+ 5% Cost Uplift; +5% Value Uplift

Total Site		
Total Gross Site Area	486	hectares

Split By Use		
Residential	50.0%	243 ha
Open Space (strategic, formal & informal)	34.0%	165 ha
Infrastructure (incl roads, utilities, community facilities)	12.5%	61 ha
Employment B1 /Offices	0.7%	3 ha
Employment B2 B8 / Industrial	1.0%	5 ha
Retail & Leisure	1.8%	9 ha
Check	100.0%	486 ha

Total Residential Units		
Average dwellings per hectare	35	dph
Total Dwelling Units	8,505	dwellings
Residential floorspace average per hectare	3,290	sqm / ha
Residential floorspace average per acre	14,320	sq ft / acre

Total Population		
Average Household size	2.4	per unit
Total Population	20,412	residents

Housing Tenure			
Overall Percentage Private Units		70%	User to define typology
Of which:	Private Type 1	100%	private sale
	Private Type 2		User to define
	Private Type 3		User to define

Overall Percentage Affordable Units		30%	User to define typology
Of which:	AH Type 1	80%	affordable rent
	AH Type 2	20%	shared ownership
	AH Type 3		starter homes

Commercial Floorspace				
Use	Total Ha	Plot Density	Storeys	Sqm (gross)
Employment B1 /Offices	3	40%	2	27,216
Employment B2 B8 / Industrial	5	40%	1	19,440
Retail & Leisure	9	40%	1	34,992
Total all commercial	17			81,648

Total Jobs*				
Use	Sqm (gross)	Net to gross	Sqm per job	Total jobs
Employment B1 /Offices	27,216	80%	20	1,089
Employment B2 B8 / Industrial	19,440	80%	50	311
Retail & Leisure	34,992	80%	15	1,866
Total all commercial				3,266

*Note additional jobs would be created in community facilities & through construction activity

SCHEME WIDE COST ASSUMPTIONS

30% Affordable Housing (80:20 AR:SO)

West of Braintree

+ 5% Cost Uplift; +5% Value Uplift

SCHEME WIDE ENABLING WORKS

Physical Costs: Site Preparation & Enabling Costs	Unit/cost	Total	Type
- Based upon generic cost per residential unit	£20,000	£170.1 m	Enabling
Sub Total		£170.1 m	

SCHEME WIDE COMMUNITY INFRASTRUCTURE

On Site: Core Social Infrastructure	Cost per unit	Total	Type
Education	£9,000	£76.5 m	Obligation
Community & Health	£2,250	£19.1 m	Obligation
Open Spaces, Leisure & Sports	£2,750	£23.4 m	Obligation
Environmental / sustainability / waste	£500	£4.3 m	Obligation
Sub Total	£14,500	£123.3 m	

SCHEME WIDE OTHER ITEMISED INFRASTRUCTURE

On Site	Total	Type
Country Park landscaping	£5.0 m	Obligation
A4 Shalford Rd / Pods Lane Quietway	£0.3 m	Obligation
PT5 Rapid Transit & Flagship Cycle Route	£5.0 m	Obligation
PT7 Transit Hub	£6.0 m	Obligation
Travel plan measures (@ £1500/unit)	£13.0 m	Enabling
Employment Support (@ £1,000/unit)	£8.5 m	Obligation
Sub Total	£37.8 m	

Off Site	Total	Type
Utilities - Primary Substations, gas & telecoms	£13.0 m	Enabling
Utilities - 5km trunk mains, discharge upgrade & 6km connection to WWTW	£9.0 m	Enabling
Active Modes A1, A2, A3 & A4 (cycleway improvements)	£6.7 m	Obligation
PT4 - A131/A130 Bus Lane	£8.0 m	Obligation
PT6 - Rapid Transit & Flagship Cycle route NW Braintree	£6.0 m	Obligation
R2 & R3 A120/B1256 Improvements (Interim & Final)	£15.0 m	Obligation
R1 - A120/B1256 New Western Junction	£7.0 m	Obligation
Contrib to strategic Public Transport solutions (@ £1,500 per unit)	£13.0 m	Obligation
Sub Total	£77.7 m	

Management & Long Term Governance	Total	Type
Open space endowments	£30.0 m	Obligation
Sub Total	£30.0 m	

Land Assembly	Total

SUMMARY ALL INFRASTRUCTURE

Summary of infra costs (excluding fees, finance & contingencies)	Per Unit	Total
Sub Total All Enabling Costs	£24,115	£205.1m
Sub Total All Planning Obligations	£27,486	£233.8m
Total	£51,602	£438.9m

SCHEME WIDE ADDITIONAL COST ASSUMPTIONS

Professional Fees & Other Costs	Amount	Total
Strategic Planning Costs (masterplanning & approvals) - per unit	£400	£3.4 m
Scheme Year first Strategic Planning Costs accrue	5	(Year)
Number of years Strategic Planning Costs applicable	3	(Years spread)
Professional Fees (design & delivery of scheme wide works)	6.0%	£24.5 m
Stamp Duty Land Tax (on land sales)	5.3%	(on value)
Agent Fees (on land sales)	1.0%	(on value)
Legal Fees (on land sales)	0.5%	(on value)

MASTER DEVELOPER / LDV RETURN

Allowance for master-developer/LDV/infra contractor profit	Amount	Total
Masterdeveloper / LDV / infrastructure contractor profit rate	15.0%	(on cost)

CONTINGENCIES

Contingencies by Type	Amount	Total
Scheme Wide Community Infrastructure	5.0%	£6.2 m
Scheme Wide Other Itemised Infrastructure - On Site	5.0%	£1.9 m
Scheme Wide Other Itemised Infrastructure - Off Site	5.0%	£3.9 m
Scheme Wide Enabling Works	5.0%	£8.5 m

On Plot: Constructions Costs		(on plot calc)
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SCHEME WIDE DISCOUNT RATE, FINANCE & MIRR ASSUMPTIONS

Contingencies by Type	Amount	Total
Discount Rate (for use in NPV calculations, pre finance costs)	2.5%	
General Finance Rate (For Baseline Appraisal)	6.0%	per anum
% of Scheme Wide Costs debt financed	100.0%	
Finance Rate (For MIRR calculation)	6.0%	per anum
Reinvest rate (For MIRR calculation)	6.0%	per anum

INFLATION

Type	Amount	Total
Cost inflation: On scheme wide costs		per anum
Cost inflation: On plot based build costs		per anum
Value inflation: On plot based building capital values		per anum

SITE BASED COST & VALUE ASSUMPTIONS

30% Affordable Housing (80:20 AR:SO)

West of Braintree

+ 5% Cost Uplift; +5% Value Uplift

RESIDENTIAL	
Unit Size	(sq m)
Capital value	(per sq m)
Build cost	(per sq m)
Sales related fees	
Profit on sales (to plot developer)	(on sales value)
Sales fees	(on sales value)
Legal fees	(on sales value)
Marketing costs	(on sales value)
Other costs	
External works & estate roads	(on build cost)
Professional fees	(on build cost)
Finance Rate (for site based works)	(on build cost)
Percentage of cost subject to finance charges	
Community Infrastructure Levy Rate	(£ per sq m)
Equivalent Land value	(£ per ha)

Private Type 1	Private Type 2	Private Type 3
private sale	User to define	User to define
100	100	100
£3,843	£3,843	£3,843
£1,167	£1,167	£1,167
20.0%	20.0%	20.0%
1.0%	1.0%	1.0%
0.5%	0.5%	0.5%
1.0%	1.0%	1.0%
15.0%	15.0%	15.0%
8.0%	8.0%	8.0%
6.0%	6.0%	6.0%
100.0%	100.0%	100.0%
£5.2m	£5.2m	£5.2m

AH Type 1	AH Type 2	AH Type 3
affordable rent	shared ownership	starter homes
80	80	80
£1,921	£2,882	£3,074
£1,167	£1,167	£1,167
6.0%	6.0%	10.0%
		1.0%
0.5%	0.5%	0.5%
		1.0%
15.0%	15.0%	15.0%
8.0%	8.0%	8.0%
6.0%	6.0%	6.0%
100.0%	100.0%	100.0%
£0.8m	£3.3m	£3.3m

COMMERCIAL	
Assumed rent	(per sqm)
Assumed Yield	
Equivalent Capital Value	(per sq m)
Build cost	(per sq m)
Sales related fees	
Profit on sales (to site developer)	(on sales value)
Sales fees	(on sales value)
Legal fees	(on sales value)
Marketing costs	(on sales value)
Other costs	
External works & estate roads	(on build cost)
Professional fees	(on build cost)
Finance Rate (for plot based works)	(on build cost)
Percentage of cost as debt for finance charges	
Community Infrastructure Levy Rate	(£ per sq m)
Equivalent Land value	(£ per ha)

B1 / Offices	B2, B8 Industrial	Retail/Leisure
	£81.00	£161.00
7.0%	6.0%	6.5%
£0	£1,350	£2,477
	£804.00	£759.00
17.5%	17.5%	17.5%
1.0%	1.0%	1.0%
0.5%	0.5%	0.5%
2.0%	2.0%	2.0%
10.0%	10.0%	10.0%
8.0%	8.0%	8.0%
6.0%	6.0%	6.0%
100.0%	100.0%	100.0%
£0.0m	£0.3m	£4.1m

Appendix 2: Colchester Braintree Borders Assumptions & Appraisal

The following worksheets present:

- Land Use breakdown
- Strategic Cost & Other Assumptions
- Site Specific Costs, Values & Assumptions
- Full Scheme Appraisal

The appraisal illustrates the modelling for the following scenario:

- 30% Affordable housing, of which 80% Affordable Rent and 20% Shared Ownership
- 5% Cost uplift (contingency)
- 5% Value uplift (premium over base residential values)

All other appraisals are based upon a constant basis, with amendments to the residential values and cost contingency assumptions.

LANDUSE ASSUMPTIONS

Colchester Braintree Borders

30% Affordable Housing (80:20 AR:SO)
+ 5% Cost Uplift; +5% Value Uplift

Total Site		
Total Gross Site Area	1,300	hectares

Split By Use		
Residential	52.0%	676 ha
Open Space (strategic, formal & informal)	26.5%	345 ha
Infrastructure (incl roads, utilities, community facilities)	15.0%	195 ha
Employment B1 /Offices	0.5%	7 ha
Employment B2 B8 / Industrial	2.5%	33 ha
Retail & Leisure	3.5%	46 ha
Check	100.0%	1300 ha

Total Residential Units		
Average dwellings per hectare	35	dph
Total Dwelling Units	23,660	dwellings
Residential floorspace average per hectare	3,290	sqm / ha
Residential floorspace average per acre	14,320	sq ft / acre

Total Population		
Average Household size	2.4	per unit
Total Population	56,784	residents

Housing Tenure			
Overall Percentage Private Units		70%	User to define typology
Of which:	Private Type 1	100%	private sale
	Private Type 2		User to define
	Private Type 3		User to define

Overall Percentage Affordable Units		30%	User to define typology
Of which:	AH Type 1	80%	affordable rent
	AH Type 2	20%	shared ownership
	AH Type 3		starter homes

Commercial Floorspace				
Use	Total Ha	Plot Density	Storeys	Sqm (gross)
Employment B1 /Offices	7	40%	2	52,000
Employment B2 B8 / Industrial	33	40%	1	130,000
Retail & Leisure	46	40%	1	182,000
Total all commercial	85			364,000

Total Jobs*				
Use	Sqm (gross)	Net to gross	Sqm per job	Total jobs
Employment B1 /Offices	52,000	80%	20	2,080
Employment B2 B8 / Industrial	130,000	80%	50	2,080
Retail & Leisure	182,000	80%	15	9,707
Total all commercial				13,867

*Note additional jobs would be created in community facilities & through construction activity

SCHEME WIDE COST ASSUMPTIONS

Colchester Braintree Borders

30% Affordable Housing (80:20 AR:SO)

+ 5% Cost Uplift; +5% Value Uplift

SCHEME WIDE ENABLING WORKS

Physical Costs: Site Preparation & Enabling Costs	Unit/cost	Total	Type
- Based upon generic cost per residential unit	£20,000	£473.2 m	Enabling
Sub Total		£473.2 m	

SCHEME WIDE COMMUNITY INFRASTRUCTURE

On Site: Core Social Infrastructure	Cost per unit	Total	Type
Education	£9,000	£212.9 m	Obligation
Community & Health	£2,250	£53.2 m	Obligation
Open Spaces, Leisure & Sports	£2,750	£65.1 m	Obligation
Environmental / sustainability / waste	£500	£11.8 m	Obligation
Sub Total	£14,500	£343.1 m	

SCHEME WIDE OTHER ITEMISED INFRASTRUCTURE

On Site	Total	Type
Country Park	£5.0 m	Obligation
A3 - Active Modes link (Church Lane - Marks Tey station)	£0.4 m	Obligation
PT1a - Rapid Transit Loop (Bus only Roads)	£42.5 m	Obligation
PT2 - Park & Ride	£4.2 m	Obligation
PT3 - West Tey Railway Station	£50.0 m	Obligation
PT4 - West Tey Transit Hub	£6.0 m	Obligation
Travel plan measures (@ £1500/unit)	£36.0 m	Obligation
Employment support (@ £750/unit)	£18.0 m	Obligation
Sub Total	£162.1 m	

Off Site	Total	Type
Utilities - Elec sub stations, gas supply & telecoms	£30.0 m	Enabling
Utilities - potable & waste water	£12.0 m	Enabling
A2 & A4 - Active Modes Connections to Rural Hinterland, Cycle Links	£1.5 m	Obligation
PR1 & PR 2- Marks Tey Station and junction package & Stane St reduction	£9.0 m	Obligation
R2 - A12 Southern junction with Garden Community	£41.5 m	Obligation
Contribution to A120 (@ £1,500 per unit)	£36.0 m	Obligation
Contribution to Rapid Transit system (@ £1000 per unit)	£24.0 m	Obligation
Sub Total	£154.0 m	

Management & Long Term Governance	Total	Type
Open space endowments	£50.0 m	Obligation
Sub Total	£50.0 m	

Land Assembly	Total

SUMMARY ALL INFRASTRUCTURE

Summary of infra costs (excluding fees, finance & contingencies)	Per Unit	Total
Sub Total All Enabling Costs	£21,775	£515.2m
Sub Total All Planning Obligations	£28,197	£667.1m
Total	£49,972	£1182.3m

SCHEME WIDE ADDITIONAL COST ASSUMPTIONS

Professional Fees & Other Costs	Amount	Total
Strategic Planning Costs (masterplanning & approvals) - per unit	£300	£7.1 m
Scheme Year first Strategic Planning Costs accrue	6	(Year)
Number of years Strategic Planning Costs applicable	3	(Years spread)
Professional Fees (design & delivery of scheme wide works)	6.0%	£67.9 m
Stamp Duty Land Tax (on land sales)	5.3%	(on value)
Agent Fees (on land sales)	1.0%	(on value)
Legal Fees (on land sales)	0.5%	(on value)

MASTER DEVELOPER / LDV RETURN

Allowance for master-developer/LDV/infra contractor profit	Amount	Total
Masterdeveloper / LDV / infrastructure contractor profit rate	15.0%	(on cost)

CONTINGENCIES

Contingencies by Type	Amount	Total
Scheme Wide Community Infrastructure	5.0%	£17.2 m
Scheme Wide Other Itemised Infrastructure - On Site	5.0%	£8.1 m
Scheme Wide Other Itemised Infrastructure - Off Site	5.0%	£7.7 m
Scheme Wide Enabling Works	5.0%	£23.7 m

On Plot: Constructions Costs		(on plot calc)
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SCHEME WIDE DISCOUNT RATE, FINANCE & MIRR ASSUMPTIONS

Contingencies by Type	Amount	Total
Discount Rate (for use in NPV calculations, pre finance costs)	2.5%	
General Finance Rate (For Baseline Appraisal)	6.0%	per anum
% of Scheme Wide Costs debt financed	100.0%	
Finance Rate (For MIRR calculation)	6.0%	per anum
Reinvest rate (For MIRR calculation)	6.0%	per anum

INFLATION

Type	Amount	Total
Cost inflation: On scheme wide costs		per anum
Cost inflation: On plot based build costs		per anum
Value inflation: On plot based building capital values		per anum

SITE BASED COST & VALUE ASSUMPTIONS

30% Affordable Housing (80:20 AR:SO)

Colchester Braintree Borders

+ 5% Cost Uplift; +5% Value Uplift

RESIDENTIAL	
Unit Size	(sq m)
Capital value	(per sq m)
Build cost	(per sq m)

Private Type 1	Private Type 2	Private Type 3
private sale	User to define	User to define
100	100	100
£3,504	£3,504	£3,504
£1,167	£1,167	£1,167

AH Type 1	AH Type 2	AH Type 3
affordable rent	shared ownership	starter homes
80	80	80
£1,752	£2,627	£2,803
£1,167	£1,167	£1,167

Sales related fees

Profit on sales (to plot developer)	(on sales value)
Sales fees	(on sales value)
Legal fees	(on sales value)
Marketing costs	(on sales value)

20.0%	20.0%	20.0%
1.0%	1.0%	1.0%
0.5%	0.5%	0.5%
1.0%	1.0%	1.0%

6.0%	6.0%	10.0%
		1.0%
0.5%	0.5%	0.5%
		1.0%

Other costs

External works & estate roads	(on build cost)
Professional fees	(on build cost)
Finance Rate (for site based works)	(on build cost)
Percentage of cost subject to finance charges	
Community Infrastructure Levy Rate	(£ per sq m)
Equivalent Land value	(£ per ha)

15.0%	15.0%	15.0%
8.0%	8.0%	8.0%
6.0%	6.0%	6.0%
100.0%	100.0%	100.0%
£4.2m	£4.2m	£4.2m

15.0%	15.0%	15.0%
8.0%	8.0%	8.0%
6.0%	6.0%	6.0%
100.0%	100.0%	100.0%
£0.4m	£2.7m	£2.7m

COMMERCIAL

Assumed rent	(per sqm)
Assumed Yield	
Equivalent Capital Value	(per sq m)
Build cost	(per sq m)

B1 / Offices	B2, B8 Industrial	Retail/Leisure
	£86.00	£161.50
7.0%	6.0%	6.5%
£0	£1,433	£2,485
	£804.00	£759.00

Sales related fees

Profit on sales (to site developer)	(on sales value)
Sales fees	(on sales value)
Legal fees	(on sales value)
Marketing costs	(on sales value)

17.5%	17.5%	17.5%
1.0%	1.0%	1.0%
0.5%	0.5%	0.5%
2.0%	2.0%	2.0%

Other costs

External works & estate roads	(on build cost)
Professional fees	(on build cost)
Finance Rate (for plot based works)	(on build cost)
Percentage of cost as debt for finance charges	
Community Infrastructure Levy Rate	(£ per sq m)
Equivalent Land value	(£ per ha)

10.0%	10.0%	10.0%
8.0%	8.0%	8.0%
6.0%	6.0%	6.0%
100.0%	100.0%	100.0%
£0.0m	£0.5m	£4.1m

BASELINE APPRAISAL
Colchester Braintree Borders

30% Affordable Housing (80:20 AR:SO)
+ 5% Cost Uplift; +5% Value Uplift

DEVELOPMENT PHASING

Phasing & Trajectories	Total
Cumulative Housing Completions	23,660
Cumulative Commercial floorspace	364,000

LAND SALES & RETURNS

Land Disposal (Hectares per year)	Total
Residential (Private Type 1)	473 ha
Residential (Private Type 2)	
Residential (Private Type 3)	
Residential (Affordable Type 1)	162 ha
Residential (Affordable Type 2)	41 ha
Residential (Affordable Type 3)	
Employment B1/offices	7 ha
Employment B2/BB	33 ha
Retail/leisure	46 ha
Total all ha (developable area)	761 ha
Total all ha (non developable area)	(Pro rata) 540 ha

Land Sales Returns (£ per year)	Rate	Total
Residential (Private Type 1)		£2,004 m
Residential (Private Type 2)		
Residential (Private Type 3)		
Residential (Affordable Type 1)		£60 m
Residential (Affordable Type 2)		£108 m
Residential (Affordable Type 3)		
Employment B1/offices		
Employment B2/BB		£18 m
Retail/leisure		£186 m
Sub Total		£2,376 m

Less Sales Related Fees	Rate	Total
Stamp Duty Land Tax	5.3%	£126 m
Agent	1.0%	£24 m
Legal Fees	0.5%	£12 m
Sub Total Sales related fees		£162 m

Total all Land Sales & Returns (net of fees) **£2,215 m**

INFRASTRUCTURE COSTS

Scheme Wide Enabling Works	Rate	Total
- Based upon generic allowance per residential unit	£20,000	£473.2 m
Scheme Wide Community Infrastructure		
Education facilities		£212.9 m
Community & Health facilities		£53.2 m
Open Spaces, Leisure & Sports facilities/pitches		£65.1 m
Environmental / sustainability / waste		£11.8 m
Scheme Wide Other Itemised Infrastructure - On Site		
Country Park		£5.0 m
A3 - Active Modes link (Church Lane - Marks Tey station)		£0.4 m
PT1a - Rapid Transit Loop (Bus only Roads)		£42.5 m
PT2 - Park & Ride		£4.2 m
PT3 - West Tey Railway Station		£50.0 m
PT4 - West Tey Transit Hub		£6.0 m
Travel plan measures (@ £1500/unit)		£36.0 m
Employment support (@ £750/unit)		£18.0 m
Scheme Wide Other Itemised Infrastructure - Off Site		
Utilities - Elec sub stations, gas supply & telecoms		£30.0 m
Utilities - potab & waste water		£12.0 m
A2 & A4 - Active Modes Connections to Rural Hinterland, Cycle Links		£1.5 m
PR1 & PR2 - Marks Tey Station and junction package & Stane St reduction		£9.0 m
R2 - A12 Southern junction with Garden Community		£41.5 m
Contribution to A120 (@ £1,500 per unit)		£36.0 m
Contribution to Rapid Transit system (@ £1000 per unit)		£24.0 m
Management & Long Term Governance		
Open space endowments		£50.0 m
Land Assembly		

All Infrastructure Costs Sub Total **£1,182.3 m**

Professional Fees	Rate	Total
Strategic Planning Costs	£7.1m	£35.5m
Professional Fees	6.0%	£70.9m

Master developer / contractor profit	Rate	Total
On infrastructure costs (excluding management & gov)	15.0%	£169.8m

Contingencies	Rate	Total
Scheme Wide Site Enabling Costs	5.0%	£23.7 m
Scheme Wide Community Infrastructure	5.0%	£17.2 m
Scheme Wide Other Itemised - On Site	5.0%	£8.1 m
Scheme Wide Other Itemised - Off Site	5.0%	£7.7 m

Scheme Wide Cost Inflation factor (if appropriate)
Total all Costs (including fees & contingencies) **£1,515.2 m**

CASHFLOW BEFORE FINANCE

Land Disposal (Hectares per year)	Total
Total Revenue	£2,215 m
Total Costs	£1,515 m
Balance per annum	£699 m
Balance Cumulative	

15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36	40/41	45/46	50/51	55/56	60/61	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10	Yr11	Yr12	Yr13	Yr14	Yr15	Yr16	Yr17	Yr18	Yr19	Yr20	Yr21	Yr22	Yr23	Yr24	Yr25	Yr26	Yr27	Yr28	Yr29	Yr30	Yr31	Yr32	Yr33	Yr34	Yr35	Yr36	Yr37	Yr38	Yr39	Yr40	Yr41	Yr42	Yr43	Yr44	Yr45	Yr46	Yr47	Yr48	Yr49	Yr50
										1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0	45.0	46.0	47.0	48.0	49.0	50.0																

15/16	16/17	17/18	18/19	19/20	20/21	25/26	30/31	35/36	40/41	45/46	50/51	55/56	60/61	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10	Yr11	Yr12	Yr13	Yr14	Yr15	Yr16	Yr17	Yr18	Yr19	Yr20	Yr21	Yr22	Yr23	Yr24	Yr25	Yr26	Yr27	Yr28	Yr29	Yr30	Yr31	Yr32	Yr33	Yr34	Yr35	Yr36	Yr37	Yr38	Yr39	Yr40	Yr41	Yr42	Yr43	Yr44	Yr45	Yr46	Yr47	Yr48	Yr49	Yr50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
						1.0	3.0	5.0	7.0	9.0	11.0	13.0	15.0	17.0	19.0	21.0	23.0	25.0	27.0	29.0	31.0	33.0	35.0	37.0	39.0	41.0	43.0	45.0	47.0	49.0	51.0	53.0	55.0	57.0	59.0	61.0	63.0	65.0	67.0	69.0	71.0	73.0	75.0	77.0	79.0	81.0	83.0	85.0	87.0	89.0	91.0	93.0	95.0	97.0	99.0	101.0	103.0	105.0	107.0	109.0	111.0	113.0	115.0	117.0	119.0	121.0	123.0	125.0	127.0	129.0	131.0	133.0	135.0	137.0	139.0	141.0	143.0	145.0	147.0	149.0	151.0	153.0	155.0	157.0	159.0	161.0	163.0	165.0	167.0	169.0	171.0	173.0	175.0	177.0	179.0	181.0	183.0	185.0	187.0	189.0	191.0	193.0	195.0	197.0	199.0	201.0	203.0	205.0	207.0	209.0	211.0	213.0	215.0	217.0	219.0	221.0	223.0	225.0	227.0	229.0	231.0	233.0	235.0	237.0	239.0	241.0	243.0	245.0	247.0	249.0	251.0	253.0	255.0	257.0	259.0	261.0	263.0	265.0	267.0	269.0	271.0	273.0	275.0	277.0	279.0	281.0	283.0	285.0	287.0	289.0	291.0	293.0	295.0	297.0	299.0	301.0	303.0	305.0	307.0	309.0	311.0	313.0	315.0	317.0	319.0	321.0	323.0	325.0	327.0	329.0	331.0	333.0	335.0	337.0	339.0	341.0	343.0	345.0	347.0	349.0	351.0	353.0	355.0	357.0	359.0	361.0	363.0	365.0	367.0	369.0	371.0	373.0	375.0	377.0	379.0	381.0	383.0	385.0	387.0	389.0	391.0	393.0	395.0	397.0	399.0	401.0	403.0	405.0	407.0	409.0	411.0	413.0	415.0	417.0	419.0	421.0	423.0	425.0	427.0	429.0	431.0	433.0	435.0	437.0	439.0	441.0	443.0	445.0	447.0	449.0	451.0	453.0	455.0	457.0	459.0	461.0	463.0	465.0	467.0	469.0	471.0	473.0	475.0	477.0	479.0	481.0	483.0	485.0	487.0	489.0	491.0	493.0	495.0	497.0	499.0	501.0	503.0	505.0	507.0	509.0	511.0	513.0	515.0	517.0	519.0	521.0	523.0	525.0	527.0	529.0	531.0	533.0	535.0	537.0	539.0	541.0	543.0	545.0	547.0	549.0	551.0	553.0	555.0	557.0	559.0	561.0	563.0	565.0	567.0	569.0	571.0	573.0	575.0	577.0	579.0	581.0	583.0	585.0	587.0	589.0	591.0	593.0	595.0	597.0	599.0	601.0	603.0	605.0	607.0	609.0	611.0	613.0	615.0	617.0	619.0	621.0	623.0	625.0	627.0	629.0	631.0	633.0	635.0	637.0	639.0	641.0	643.0	645.0	647.0	649.0	651.0	653.0	655.0	657.0	659.0	661.0	663.0	665.0	667.0	669.0	671.0	673.0	675.0	677.0	679.0	681.0	683.0	685.0	687.0	689.0	691.0	693.0	695.0	697.0	699.0	701.0	703.0	705.0	707.0	709.0	711.0	713.0	715.0	717.0	719.0	721.0	723.0	725.0	727.0	729.0	731.0	733.0	735.0	737.0	739.0	741.0	743.0	745.0	747.0	749.0	751.0	753.0	755.0	757.0	759.0	761.0	763.0	765.0	767.0	769.0	771.0	773.0	775.0	777.0	779.0	781.0	783.0	785.0	787.0	789.0	791.0	793.0	795.0	797.0	799.0	801.0	803.0	805.0	807.0	809.0	811.0	813.0	815.0	817.0	819.0	821.0	823.0	825.0	827.0	829.0	831.0	833.0	835.0	837.0	839.0	841.0	843.0	845.0	847.0	849.0	851.0	853.0	855.0	857.0	859.0	861.0	863.0	865.0	867.0	869.0	871.0	873.0	875.0	877.0	879.0	881.0	883.0	885.0	887.0	889.0	891.0	893.0	895.0	897.0	899.0	901.0	903.0	905.0	907.0	909.0	911.0	913.0	915.0	917.0	919.0	921.0	923.0	925.0	927.0	929.0	931.0	933.0	935.0	937.0	939.0	941.0	943.0	945.0	947.0	949.0	951.0	953.0	955.0	957.0	959.0	961.0	963.0	965.0	967.0	969.0	971.0	973.0	975.0	977.0	979.0	981.0	983.0	985.0	987.0	989.0	991.0	993.0	995.0	997.0	999.0	1001.0	1003.0	1005.0	1007.0	1009.0	1011.0	1013.0	1015.0	1017.0	1019.0	1021.0	1023.0	1025.0	1027.0	1029.0	1031.0	1033.0	1035.0	1037.0	1039.0	1041.0	1043.0	1045.0	1047.0	1049.0	1051.0	1053.0	1055.0	1057.0	1059.0	1061.0	1063.0	1065.0	1067.0	1069.0	1071.0	1073.0	1075.0	1077.0	1079.0	1081.0	1083.0	1085.0	1087.0	1089.0	1091.0	1093.0	1095.0	1097.0	1099.0	1101.0	1103.0	1105.0	1107.0	1109.0	1111.0	1113.0	1115.0	1117.0	1119.0	1121.0	1123.0	1125.0	1127.0	1129.0	1131.0	1133.0	1135.0	1137.0	1139.0	1141.0	1143.0	1145.0	1147.0	1149.0	1151.0	1153.0	1155.0	1157.0	1159.0	1161.0	1163.0	1165.0	1167.0	1169.0	1171.0	1173.0	1175.0	1177.0	1179.0	1181.0	1183.0	1185.0	1187.0	1189.0	1191.0	1193.0	1195.0	1197.0	1199.0	1201.0	1203.0	1205.0	1207.0	1209.0	1211.0	1213.0	1215.0	1217.0	1219.0	1221.0	1223.0	1225.0	1227.0	1229.0	1231.0	1233.0	1235.0	1237.0	1239.0	1241.0	1243.0	1245.0	1247.0	1249.0	1251.0	1253.0	1255.0	1257.0	1259.0	1261.0	1263.0	1265.0	1267.0	1269.0	1271.0	1273.0	1275.0	1277.0	1279.0	1281.0	1283.0	1285.0	1287.0	1289.0	1291.0	1293.0	1295.0	1297.0	1299.0	1301.0	1303.0	1305.0	1307.0	1309.0	1311.0	1313.0	1315.0	1317.0	1319.0	1321.0	1323.0	1325.0	1327.0	1329.0	1331.0	1333.0	1335.0	1337.0	1339.0	1341.0	1343.0	1345.0	1347.0	1349.0	1351.0	1353.0	1355.0	1357.0	1359.0	1361.0	1363.0	1365.0	1367.0	1369.0	1371.0	1373.0	1375.0

Appendix 3: Tendring Colchester Borders Assumptions & Appraisal

The following worksheets present:

- Land Use breakdown
- Strategic Cost & Other Assumptions
- Site Specific Costs, Values & Assumptions
- Full Scheme Appraisal

The appraisal illustrates the modelling for the following scenario:

- 30% Affordable housing, of which 80% Affordable Rent and 20% Shared Ownership
- 5% Cost uplift (contingency)
- 5% Value uplift (premium over base residential values)

All other appraisals are based upon a constant basis, with amendments to the residential values and cost contingency assumptions.

LANDUSE ASSUMPTIONS
Tendring Colchester Borders

30% Affordable Housing (80:20 AR:SO)
+ 5% Cost Uplift; +5% Value Uplift

Total Site		
Total Gross Site Area	425	hectares

Split By Use		
Residential	50.0%	213 ha
Open Space (strategic, formal & informal)	25.0%	106 ha
Infrastructure (incl roads, utilities, community facilities)	15.0%	64 ha
Employment B1 /Offices	2.5%	11 ha
Employment B2 B8 / Industrial	4.0%	17 ha
Retail & Leisure	3.5%	15 ha
Check	100.0%	425 ha

Total Residential Units		
Average dwellings per hectare	37.5	dph
Total Dwelling Units	7,969	dwellings
Residential floorspace average per hectare	3,525	sqm / ha
Residential floorspace average per acre	15,343	sq ft / acre

Total Population		
Average Household size	2.4	per unit
Total Population	19,126	residents

Housing Tenure			
Overall Percentage Private Units		70%	User to define typology
Of which:	Private Type 1	100%	private sale
	Private Type 2		User to define
	Private Type 3		User to define

Overall Percentage Affordable Units		30%	User to define typology
Of which:	AH Type 1	80%	affordable rent
	AH Type 2	20%	shared ownership
	AH Type 3		starter homes

Commercial Floorspace				
Use	Total Ha	Plot Density	Storeys	Sqm (gross)
Employment B1 /Offices	11	25%	2	53,125
Employment B2 B8 / Industrial	17	40%	1	68,000
Retail & Leisure	15	40%	1	59,500
Total all commercial	43			180,625

Total Jobs*				
Use	Sqm (gross)	Net to gross	Sqm per job	Total jobs
Employment B1 /Offices	53,125	80%	20	2,125
Employment B2 B8 / Industrial	68,000	80%	50	1,088
Retail & Leisure	59,500	80%	15	3,173
Total all commercial				6,386

*Note additional jobs would be created in community facilities & through construction activity

SCHEME WIDE COST ASSUMPTIONS

Tendingr Colchester Borders

30% Affordable Housing (80:20 AR:SO)

+ 5% Cost Uplift; +5% Value Uplift

SCHEME WIDE ENABLING WORKS

Physical Costs: Site Preparation & Enabling Costs	Unit/cost	Total	Type
- Based upon generic cost per residential unit	£20,000	£159.4 m	Enabling
Sub Total		£159.4 m	

SCHEME WIDE COMMUNITY INFRASTRUCTURE

On Site: Core Social Infrastructure	Cost per unit	Total	Type
Education	£9,000	£71.7 m	Obligation
Community & Health	£2,250	£17.9 m	Obligation
Open Spaces, Leisure & Sports	£2,750	£21.9 m	Obligation
Environmental / sustainability / waste	£500	£4.0 m	Obligation
Sub Total	£14,500	£115.6 m	

SCHEME WIDE OTHER ITEMISED INFRASTRUCTURE

On Site	Total	Type
Country Park (to include A4)	£5.0 m	Obligation
Porvision of on site rapid transit & facilities	£30.0 m	Obligation
PR1 - A133 Boulevard & Access	£6.0 m	Enabling
R1 - A120-A133 Link Road	£8.0 m	Obligation
Travel Plan measures (@ £1500 per unit)	£12.0 m	Obligation
Sub Total	£61.0 m	

Off Site	Total	Type
Electricity Primary Substations	£12.0 m	Enabling
Potable water 5km trunk mains, waste upgrade & 2.5km connection	£10.0 m	Enabling
Gas - upgrade to network, telecoms network	£5.0 m	Enabling
Active Modes (A1, A5, A6, A7, A8)	£6.1 m	Enabling
PT1 - Rapid Transit (contribution of £750 per unit)	£6.0 m	Enabling
R2 A133-B1027/B1028 Link	£1.0 m	Obligation
R3 - A137/Bromley Rd Improvements	£4.0 m	Obligation
Sub Total	£44.1 m	

Management & Long Term Governance	Total	Type
Open space endowments	£23.0 m	Obligation
Sub Total	£23.0 m	

Land Assembly	Total

SUMMARY ALL INFRASTRUCTURE

Summary of infra costs (excluding fees, finance & contingencies)	Per Unit	Total
Sub Total All Enabling Costs	£25,659	£204.5m
Sub Total All Planning Obligations	£24,915	£198.6m
Total	£50,575	£403.0m

SCHEME WIDE ADDITIONAL COST ASSUMPTIONS

Professional Fees & Other Costs	Amount	Total
Strategic Planning Costs (masterplanning & approvals) - per unit	£350	£2.8 m
Scheme Year first Strategic Planning Costs accrue	5	(Year)
Number of years Strategic Planning Costs applicable	3	(Years spread)
Professional Fees (design & delivery of scheme wide works)	6.0%	£22.8 m
Stamp Duty Land Tax (on land sales)	5.3%	(on value)
Agent Fees (on land sales)	1.0%	(on value)
Legal Fees (on land sales)	0.5%	(on value)

MASTER DEVELOPER / LDV RETURN

Allowance for master-developer/LDV/infra contractor profit	Amount	Total
Masterdeveloper / LDV / infrastructure contractor profit rate	15.0%	(on cost)

CONTINGENCIES

Contingencies by Type	Amount	Total
Scheme Wide Community Infrastructure	5.0%	£5.8 m
Scheme Wide Other Itemised Infrastructure - On Site	5.0%	£3.1 m
Scheme Wide Other Itemised Infrastructure - Off Site	5.0%	£2.2 m
Scheme Wide Enabling Works	5.0%	£8.0 m

On Plot: Constructions Costs		(on plot calc)
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SCHEME WIDE DISCOUNT RATE, FINANCE & MIRR ASSUMPTIONS

Contingencies by Type	Amount	Total
Discount Rate (for use in NPV calculations, pre finance costs)	2.5%	
General Finance Rate (For Baseline Appraisal)	6.0%	per anum
% of Scheme Wide Costs debt financed	100.0%	
Finance Rate (For MIRR calculation)	6.0%	per anum
Reinvest rate (For MIRR calculation)	6.0%	per anum

INFLATION

Type	Amount	Total
Cost inflation: On scheme wide costs		per anum
Cost inflation: On plot based build costs		per anum
Value inflation: On plot based building capital values		per anum

SITE BASED COST & VALUE ASSUMPTIONS

30% Affordable Housing (80:20 AR:SO)

Tendring Colchester Borders

+ 5% Cost Uplift; +5% Value Uplift

RESIDENTIAL	
Unit Size	(sq m)
Capital value	(per sq m)
Build cost	(per sq m)

Private Type 1	Private Type 2	Private Type 3
private sale	User to define	User to define
100	100	100
£3,390	£3,390	£3,390
£1,167	£1,167	£1,167

AH Type 1	AH Type 2	AH Type 3
affordable rent	shared ownership	starter homes
80	80	80
£1,695	£2,543	£2,712
£1,167	£1,167	£1,167

Sales related fees

Profit on sales (to plot developer)	(on sales value)
Sales fees	(on sales value)
Legal fees	(on sales value)
Marketing costs	(on sales value)

20.0%	20.0%	20.0%
1.0%	1.0%	1.0%
0.5%	0.5%	0.5%
1.0%	1.0%	1.0%

6.0%	6.0%	15.0%
		1.0%
0.5%	0.5%	0.5%
		1.0%

Other costs

External works & estate roads	(on build cost)
Professional fees	(on build cost)
Finance Rate (for site based works)	(on build cost)
Percentage of cost subject to finance charges	
Community Infrastructure Levy Rate	(£ per sq m)
Equivalent Land value	(£ per ha)

15.0%	15.0%	15.0%
8.0%	8.0%	8.0%
6.0%	6.0%	6.0%
100.0%	100.0%	100.0%
£4.2m	£4.2m	£4.2m

15.0%	15.0%	15.0%
8.0%	8.0%	8.0%
6.0%	6.0%	6.0%
100.0%	100.0%	100.0%
£0.2m	£2.6m	£2.2m

COMMERCIAL

Assumed rent	(per sqm)
Assumed Yield	
Equivalent Capital Value	(per sq m)
Build cost	(per sq m)

B1 / Offices	B2, B8 Industrial	Retail/Leisure
£175.00	£75.00	£165.00
7.0%	6.5%	6.5%
£2,500	£1,154	£2,538
£1,500.00	£645.00	£1,000.00

Sales related fees

Profit on sales (to site developer)	(on sales value)
Sales fees	(on sales value)
Legal fees	(on sales value)
Marketing costs	(on sales value)

17.5%	17.5%	17.5%
1.0%	1.0%	1.0%
0.5%	0.5%	0.5%
2.0%	2.0%	2.0%

Other costs

External works & estate roads	(on build cost)
Professional fees	(on build cost)
Finance Rate (for plot based works)	(on build cost)
Percentage of cost as debt for finance charges	
Community Infrastructure Levy Rate	(£ per sq m)
Equivalent Land value	(£ per ha)

10.0%	10.0%	10.0%
8.0%	8.0%	8.0%
6.0%	6.0%	6.0%
100.0%	100.0%	100.0%
£0.6m	£0.4m	£3.1m

