

Chelmsford County High School for Girls

Estate Strategy

2022-2027

Introduction

The Chelmsford County High School Estate Strategy document aims to align the strategic educational vision and objectives with the facilities available and ensure that planning is in place to deliver and maintain an estate that supports the academic rigour of the School as well as extra-curricular opportunities and support of local community groups. The School's ethos is the foundation of the strategic planning of the estate:

- Mission: **A progressive grammar school community, committed to excellence in girls' education and empowerment.**
- Vision: Developing the leaders of tomorrow – **citizenship**: *inspire future citizens to think for themselves and to act for others.*
- Aim: The pursuit of excellence – **distinction**: *provide students with an outstanding education, with students doing their best in all endeavours.*
- Aim: Fulfilling individual potential – **challenge**: *motivate students to acquire new knowledge & understanding and stimulate them to develop new skills & attributes.*
- Aim: Contributing to the community – **duty**: *ensure students conduct themselves with civility and compassion at all times, supporting each other and looking beyond themselves.*
- English, Sport and Arts subjects – **imagination**: *enable students to explore new ideas and empathise with the thinking of others, without limitation or risk.*
- Mathematics, Computer Science and Natural Sciences subjects – **enlightenment**: *equip students with the insight and determination to embrace new ideas, technology and innovation, enabling them to contribute to the ever-changing natural and physical world around them.*
- Humanities, Languages and Social Sciences subjects – **diversity**: *provide students with the tools to respect and celebrate the great diversity of cultures, backgrounds and beliefs, within and beyond the School, whilst recognising that we have more in common than that which divides us.*

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Version Control

Version	Author	Changes	Date	GB Approval Date	Next Review Date
0.1	Melissa Mulgrew	Draft document	29/12/22		

Executive Summary

The CCHS estate has improved in quality, offering and sustainability since the last Condition Data Collection (CDC) report undertaken in 2016:

- The Bancroft & Chapman buildings now offer facilities for sports and STEM subjects fit for 21st Century teaching and the sports facilities represent a significant benefit for local community groups. Between them, the buildings are carbon neutral and represent 25% of the estate building footprint
- 22% of CDC rated C or worse facets were remediated when the Economics hut, original Bancroft building and demountable Physics rooms were demolished as part of the SSEF (Selective School Expansion Fund) building project.

A number of challenges remain with the condition of building fabric and infrastructure:

- 21 of 52 teaching spaces are under sized according to Building Bulletin 103 (BB103) recommendations
- Dining facilities are under BB103 recommendations
- 1960's constructed facilities are reported across all school estates as having the worst condition. This represents 16% of the CCHS estate (Hall, Art Rooms, Pool). This age of building has a higher level of hazardous materials than other areas, which introduces a financial burden for remediation
- Many of the older buildings are not energy efficient, which is a financial risk and does not reflect our ethos of citizenship and community in terms of carbon emissions and sustainability. 50% of gas usage and 88% of electricity usage is driven by the main building, which has a number of issues in relation to age and energy efficiency. 29% of gas consumption is via the swimming pool, which has notable issues.
- Our sixth form facilities are fragmented across the estate
- The site has a large boundary area, much of which borders residential properties. The age and security of the fencing represents a security and potential safeguarding concern.

Various facets have been looked at in this document, however the key recommendations are as follows:

Short term (1-2 years)

- Address end of life energy infrastructure
- Develop and implement upgrade strategy for the pool
- Implement no cost/ low cost energy and carbon emission efficiencies
- Identify funding stream to address catering constraints

- Implement a phased upgrade to the boundary security

Medium term (2-5 years)

- Address catering constraints
- Develop and begin implementation of medium cost carbon emission efficiencies
- Invest in building fabric upgrade regarding energy efficiency
- Monitor developments in affordability and efficiency of carbon reduction technology
- Develop strategy for 1950-70's buildings, potentially incorporating resolution of sixth form space fragmentation

Longer term (5 years +) – subject to financial viability

- Implement building upgrades for 1950-1970's constructions
- Implement strategic carbon reduction measures.
- Defragment sixth form facilities

1. Description of the CCHS Estate

The Chelmsford County High School estate comprises of the following:

- The original building dated 1906 (now named the Vernon-Harcourt building) with extensions and modifications in the 1920's, 1960's and 1980's.
- The Anstee building, adjacent to the Vernon Harcourt building, which opened in 2013
- The Cadbury building – a science block opened in 1994
- The Pattison building – a dedicated music block opened in 2008
- The 'Sixth form house' – 120 Broomfield Road, built prior to 1900
- The 'old' caretakers house – built c. 1907
- The 'new' caretakers house – built c. 1962
- The drama and Year 12 common room, with additional study space – built c.2007
- The Year 13 common room- converted from design and technology space in the 2010's
- The Bancroft building – 4 science laboratories and 5 teaching rooms, opened in 2021
- The Chapman building – Sports hall, fitness suite, dance studio and gym, opened in 2021
- A swimming pool – opened in 1964
- 5 external tennis courts, 2 of which are floodlit
- An astroturf pitch, primarily designed for hockey, which is floodlit and built in XXXX

Defining characteristics

The School does not have listed status, however two cedar trees at the front of the property by the Sixth form house have tree protection orders in place.

Due to the age of the main building and the intention at the time of constructing the Cadbury building that sciences would be taught in smaller class sizes, there are a number of rooms that do not meet the minimum space requirements prescribed under Building Bulletin 103 (BB103) . The Cadbury science laboratories range in size between 72.4 sq.m and 78.4 sq.m in contrast to the recommendation of 90sq.m for a class of 30 under BB103. There are 11 rooms in the Vernon Harcourt building that are less than the recommended 55sq.m for 30 students, with the smallest being 40.9 sq.m. The largest of the two Art rooms is 89.6 sq.m versus the recommend 104 sq.m. Until 2021, the indoor sports facilities consisted of the 1920's gym of 210.3 sq.m. This was replaced by a 650 sq.m sports hall plus additional fitness, dance and gym facilities. The average room size is relatively small, reflecting the organic growth of the estate over the last 120 years.

The use of green space over the years to adapt to the increasing numbers of students, in close proximity to the City centre, has resulted in green space remaining being reduced below the recommended amount. [School land transactions: guidance \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/guidance/school-land-transactions) suggests that

we should have 72,000 sq.m (based on our funding agreement capacity of 1260). We currently have 38,500 sq.m (note that this is not actual sq.m as some spaces incur higher weighting)

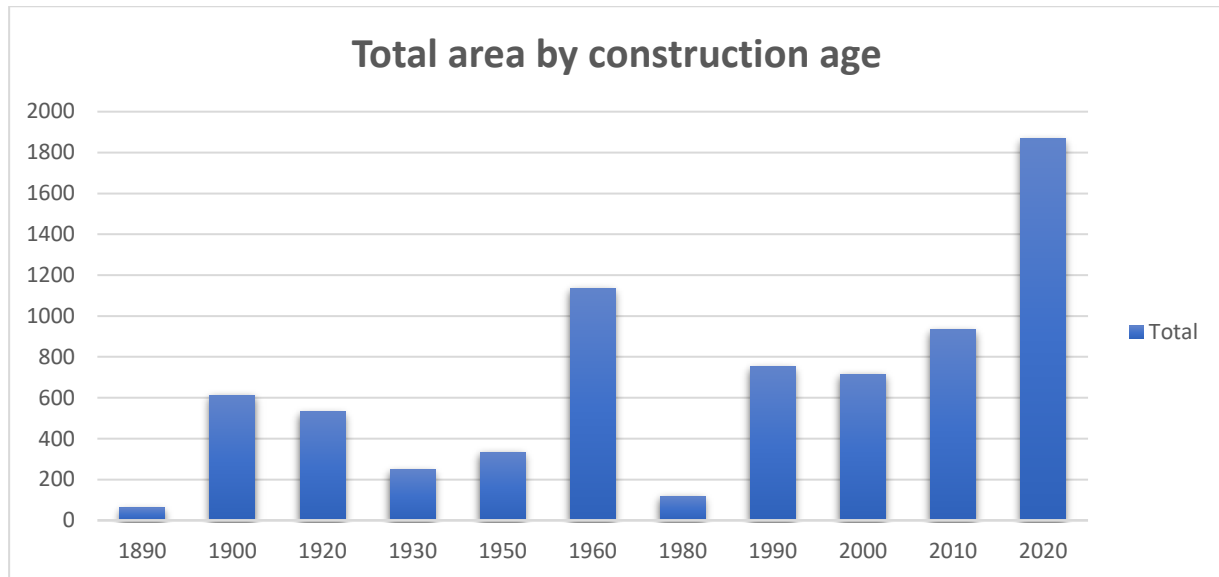
There are several deeds of easement across the property in relation to access to the substations and provision of a high voltage cable to the Anglia Ruskin University Campus plus usage of the land adjacent to Seymour House nursery. There is an additional tenancy agreement relating to a small area of land utilised by Keene Homes.

2. Key data sets that inform the Estate Strategy

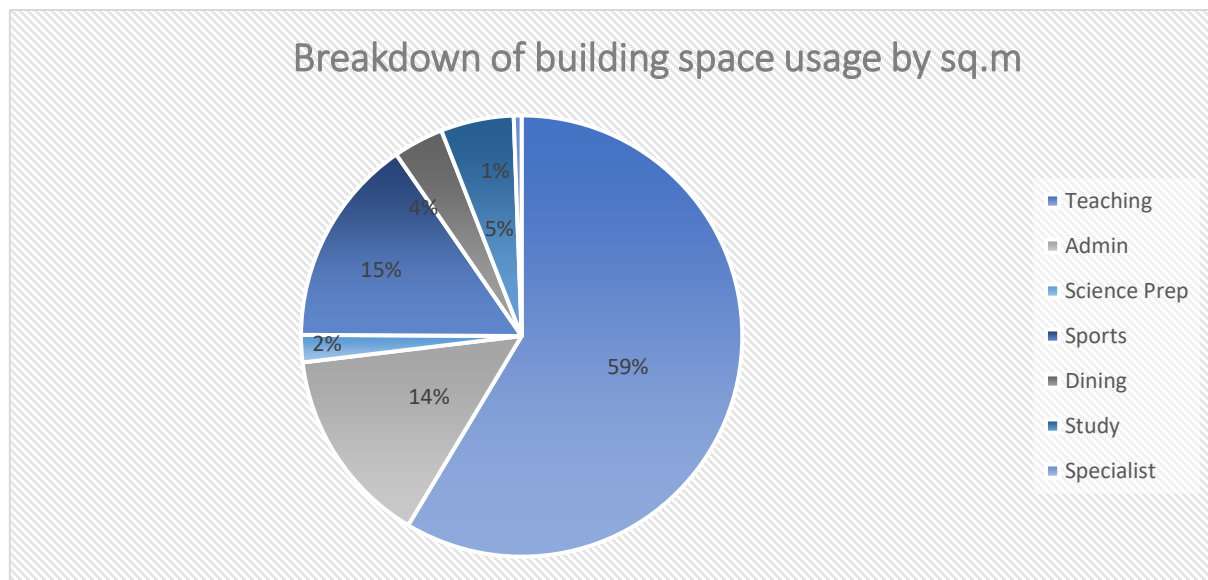
The following charts provide a more detailed analysis of the Estate and their data is used to inform the issues chapter of the Estate Strategy. Data is drawn from CCHS Archives, the Department for Education Condition Data Collection (CDC) Report (November 2020), site maps provided by PCH Associates Ltd, an Energy Audit conducted in 2022 and the ESFA valuation report.

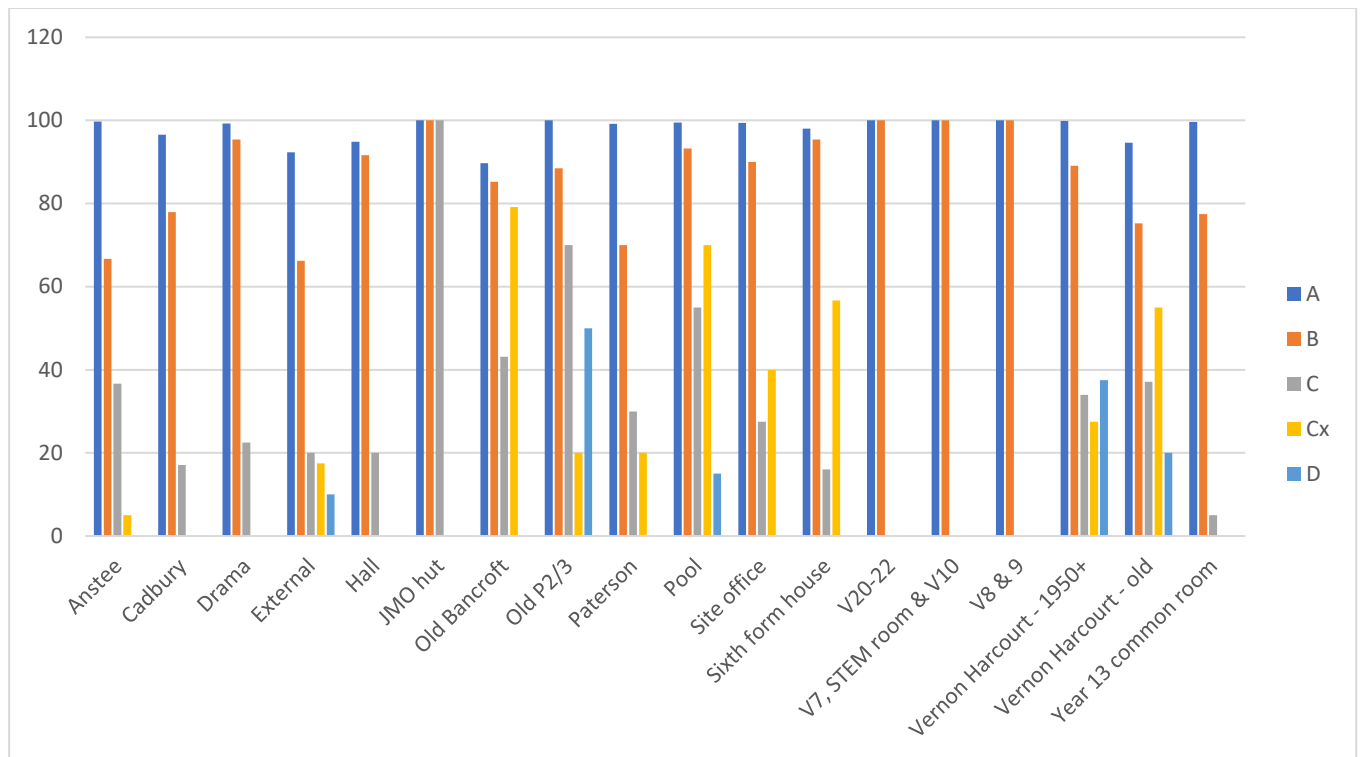
Total land holding	Approx 62,000 sq.m, all freehold
Building Value	£11,725,000
Land Value	£5,635,000
Building size	Approx. 13,000 sq.m
Teaching space	5656 sq.m

Note that admin space includes all offices, storage, plant rooms and circulation.

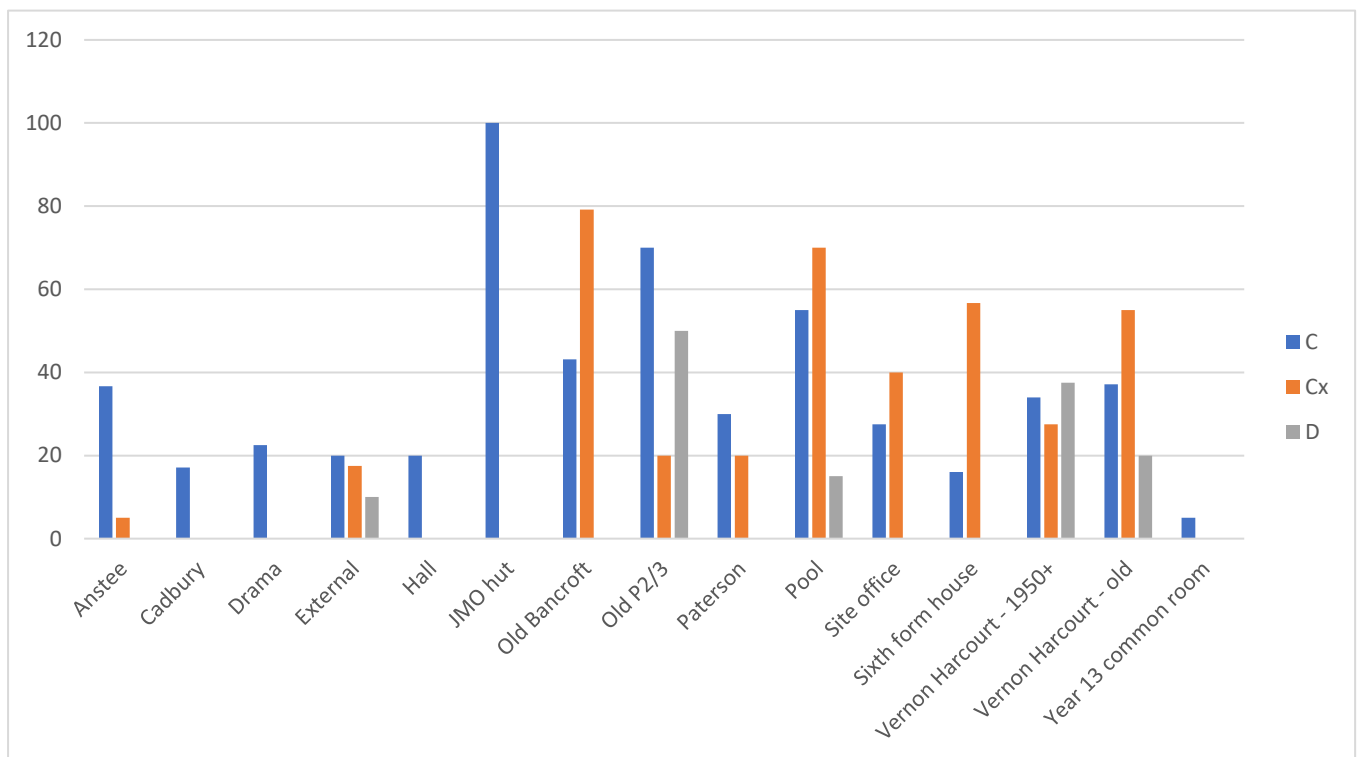


Condition Survey 2020 (based on 2016) results

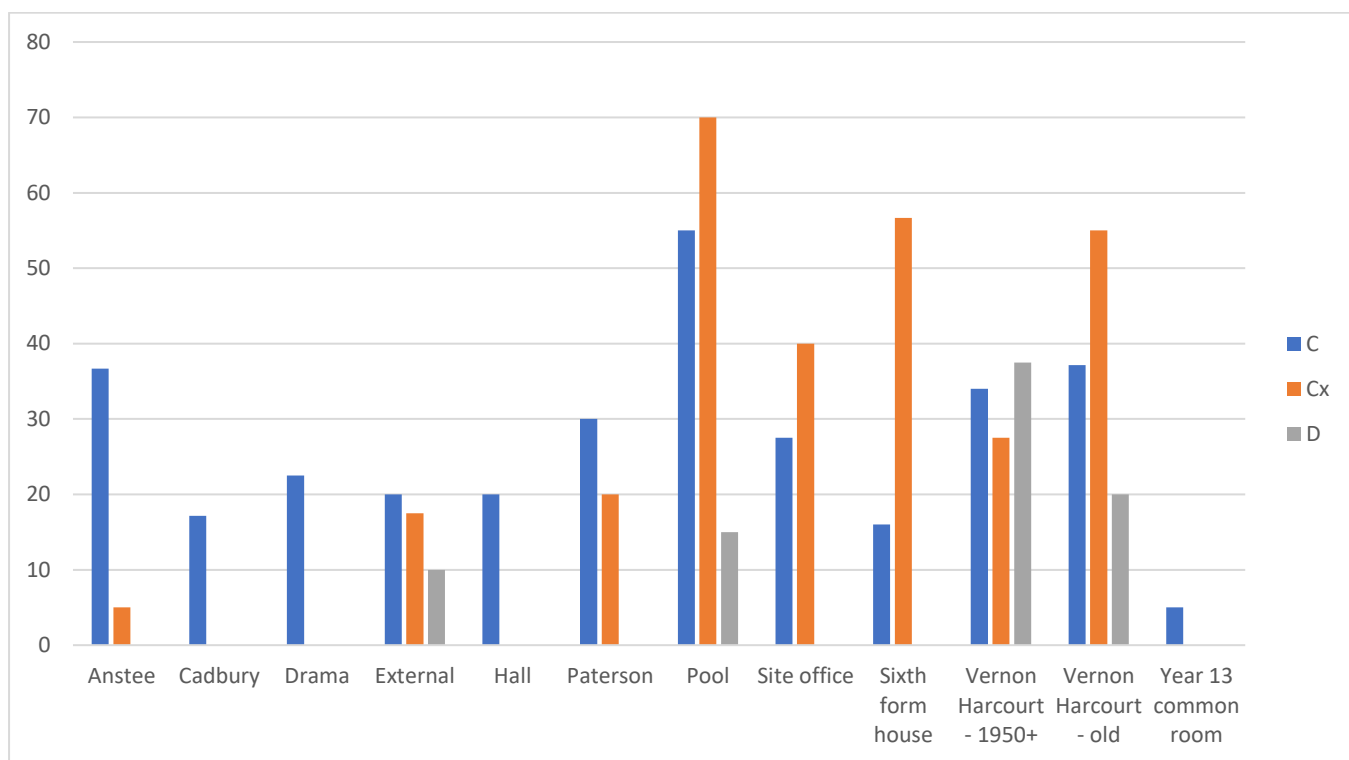




Condition Survey – excluding A & B ratings



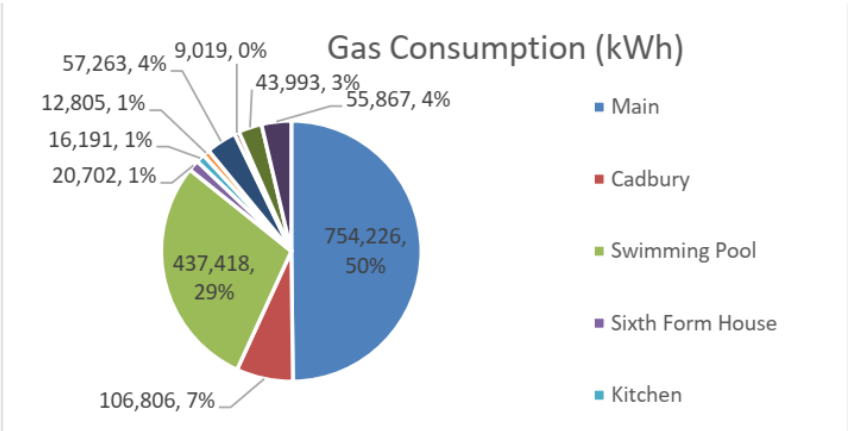
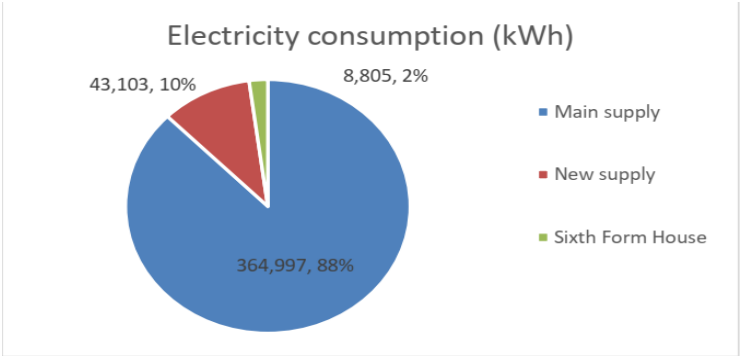
Condition Survey - excluding A&B rating and subsequently demolished buildings.



Energy Summary of teaching areas (source: Briar Consulting Energy Audit)

Site Name	Type	GIA (m²)	Energy Use (kWh/year)	Grid Electricity Use (kWh/year)	Fossil Fuel Use (kWh/year)	Fossil Fuel (%)	Fossil Fuel Use (kWh/m²/yr)	Other Energy Use (kWh/year)	Total Carbon Emissions (tCO ₂ e/year)	DEC Rating
Main	School	6,621								66 C
New Extension (Anstee)	School	812								93 D
Drama	School	473								74 C
Science (Cadbury)	School	950								138 F
Sports	School	1,353								EPC 8 A
New Teaching	School	1,079								EPC -10 A+
		11,288	2,030,501	416,904	1,514,289	75%	134	99,308	395.4	

Energy consumption (source: Briar Consulting Energy Audit)



3. Actions Taken from 2016 CDC Report

Since the 2016 condition survey (most recently published in November 2020) the following actions have been taken for items rated less than 80% grade A or B.

CDC Reference: EFA1 / EFAA – Vernon Harcourt pitched roof cast iron drainage

Cast iron hoppers supplemented in 2022 with additional hoppers. Additional sleeving added to original cast iron piping.

CDC Reference: EFA1 / EFAG – Pattison ceiling and internal decoration

Roofing repairs made following leaks. Internal decoration made good.

CDC Reference: EFA1 / EFAH – Economics demountable

Structure demolished as part of strategic building project

CDC Reference: EFA1 / EFAL – Old Bancroft building

Structure demolished as part of strategic building project

CDC Reference: EFA1 / EFAM – Physics demountable

Structure demolished as part of strategic building project

CDC Reference: EFA1 / EFAN – Vernon Harcourt 1950+ windows

Windows replaced in 2019

CDC Reference: EFA1 / EFAC – Anstee carpets

Worn / stained carpets replaced on ongoing basis. Carpet cleaner purchased 2022.

CDC Reference: EFA1 / various – internal plaster finish

Ongoing rolling maintenance.

CDC Reference: EFA1 / various – roofing

Original slates replaced on entire building across 2020 & 2022. Flat roofing replaced on various sites 2022.

4. Remaining CDC Priorities

The following items were rated C or below in the CDC report and are not covered by the rolling maintenance schedule.

CDC Reference: EFA1 / EFAB – Hall external envelope composite construction

No planned works

CDC Reference: EFA1 / EFAO – Pool

Walls, ceiling and internal joinery: Insurance claim underway to resolve damage caused by ground movement

Mechanical & Electrical services – plans underway to replace boiler. Plant is end of life and fundraising campaign commencing to replace.

CDC Reference: EFA1 / EFAD – Site house – ceilings and internal decoration

No planned works

CDC Reference: EFA1 / EFAE – Sixth form house exposed masonry & ceiling condition

No planned works

CDC Reference: EFA1 / EFAN – Vernon Harcourt 1950+ external envelope & concrete frame

No planned works – cost challenges relating to hazardous materials

CDC Reference: EFA1 / EFAA – Vernon Harcourt original building – various items

Cost challenges to replace windows in keeping with heritage front of school. Not considered severe enough condition for CIF bid

Boiler replacement subject of 2023/24 Condition Improvement Fund (CIF) bid

No other planned works

5. Strategic Priorities and Considerations

The key requirement of this strategy is to assess whether the estate is fit for purpose for the School's needs, taking a detailed look at the upcoming 5 year period to 2027. Taking a traditional SWOT (Strengths, Weaknesses, Opportunities & Threats) approach, the following are key considerations

These are then considered in terms of objectives and ethos

Strengths

CCHS has high academic attainment and progress measures

The programme of extra-curricular activity and enrichment is a strong feature of our offering

Students are happy and there is a strong sense of community amongst both staff and students

Our newest facilities have expanded opportunities available, improved the estate layout and are carbon neutral

The site team are extremely skilled in managing the estate and ensuring a high standard of maintenance and decoration

Self-generated revenue from lettings is high. The lettings business supports a large number of community groups, including 3 swimming schools and approximately 6 primary schools in achieving their swimming related curriculum requirements. The reliance on lettings is also a threat financially however.

Accessibility of the estate

Weaknesses

Catering facilities are undersized for the number of students

The condition of the 1950-1980 facilities is poor. These areas contain hazardous materials that make improvements challenging financially

The main boiler room is end of life and does not have a modern BMS (Building Management System) to effectively control energy usage

The old part of the Vernon Harcourt building is still on a single pipe heating system, which is energy inefficient and costly to replace

The pool is extremely aged, suffering from ground movement and has obsolete plant equipment. The changing room is aged. The pool is lined with individual tiles which is high maintenance. The energy usage is high and dated design of plant uses chemicals that required high water turnover

The site boundary is adjacent to a large number of residential properties. The age and condition of boundary fencing is security and safeguarding risk.

Opportunities

Sixth form facilities could be consolidated to offer a more cohesive and co-ordinated sixth form experience. There are challenges with this regarding available space

Increased PAN (Primary Admission Number) from Year 7 attracts additional income which could be used to support addressing some of the remaining infrastructure weaknesses

Threats

Increasing energy prices

Reliance on the pool for lettings business and the overall reliance on lettings income

Is our Estate coherent in design, and right sized, to support our aims and ethos going forward?

The majority of the Estate is now divided into appropriate zones per subject (separate buildings for Sports, Science, Languages, Drama, Music, etc.) The outlier to this is the sixth form offering. As our sixth form is growing in line with our six forms of entry in Year 7, the facilities available to the sixth form is fragmented across the Estate.

Space is efficiently used for teaching and is capable of supporting the additional forms of entry into Year 7, albeit acknowledging that there are a high number of rooms that do not meet BB103 requirements and are under-sized for the cohort.

Catering facilities are struggling to cope with the number of students. A re-design of the servery in the main dining hall has eased this problem, but we are still short of seating space (descoped from the recent building project due to financial constraints)

Storage facilities are limited, however there is an intention to convert the new caretakers house to additional storage and work- space to ease this pressure.

Our funding agreement has a maximum of 1260 students. As at October 2022 census there were 1163 students on roll so an additional 100 students is feasible although noting that the sixth form is currently at c. 300 students against the funding agreement limit of 360.

Is our Estate in a suitable condition?

Based on items not yet addressed from the CDC report, 93% of the estate (which did not include either the Bancroft or Chapman buildings) is either A or B condition rated.

In line with the general findings published by the DfE the buildings built in the 1960's are in the worst condition (Hall, Art block, Pool)

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/989912/Condition_of_School_Buildings_Survey_CDC1_-_key_findings_report.pdf

There are challenges with addressing these buildings due to the specialised knowledge required (in the case of the pool) and the scale of the buildings and quantity of hazardous materials present. These areas also represent the second highest areas of occupancy on our estate.

The age of the Vernon Harcourt building presents some unique challenges in respect of the energy efficiency.

The majority of the building facilities are accessible

Is our Estate financially sustainable?

Overall, the Estate is financially sustainable and adequate reserves are in place to weather any short term issues, however there are a number of challenges present and on the horizon:

- We budget carefully for IT asset renewal, however with a longer expected lifespan infrastructure costs, particularly plant, is not as readily forecast and built into a rolling programme.
- Utility costs are increasing and could potentially have a significant impact when the fixed price contracts expire in September '23 and '24 for electricity and gas respectively. Whilst energy efficiency measure can be put in place, these will have limited impact and require capital outlay that has a fairly long payback period.
- We are heavily reliant on lettings income. With concerns regarding the condition of the pool any prolonged period that pool is required to be unavailable will have a detrimental impact.

Is our Estate environmentally sustainable?

The recent energy audit commissioned identified 260.3 tCO₂e annual carbon savings that could be made, however this requires a capital expenditure of in excess of £3.8m with an incremental energy cost of c. £15k per annum.

No cost/ low cost actions could reduce carbon emissions by approximately 30 tCO₂e annually, which should be actioned.

A number of the recommendations made (e.g. air source heat pumps) would still require additional support from traditional fossil fuel methods and introduce incremental energy costs.

In the context of financial viability, School needs to carefully consider cost avoidance actions versus payback periods and continue to monitor developments in renewable energy sources so that these can be implemented when cost efficient to do so.

6. Issue Summary, Options and Solutions

This section considers the issues raised and potential options

Sixth Form Offering

From the earlier commentary, the sixth form offering remains the main part of the estate that is not zoned. The Year 12 common room is under-sized for a potential 180 intake and the catering facilities are sub-optimal. The Year 13 common room is reasonably sized, as are the study spaces provided (the 'Loft', sixth form study area (former library) and dedicated sixth form spaces in the Library) however they are distributed across the estate. The sixth form do have access to a branded beverage outlet, along with staff.

Ideally, we would like to build a dedicated sixth form facility to ensure maximum retention and recruitment of students, however there are challenges associated with this in terms of space available and cost. These are detailed below.

Scope

Teaching space would potentially be needed for all subjects, excluding those that need specialist space (sciences, art, computer science, music, theatre studies & sports). Based on existing Year 12 timetables, for 167 students, this comprises of a maximum of 8 teaching spaces for the year or 16 across 2 years.

If we look at a dedicated teaching space for sixth form only subjects as a minimum (Further Maths, Economics, Government & Politics, Psychology, EPQ) this requires 4 rooms per year – allowing for some growth this could be increased to 10 rooms in total, able to seat a class of up to 25. This would also allow an entire year group to have tutor rooms in the building, assuming a maximum of 10 tutor groups with 18 students and seems more achievable than 16 teaching spaces. Alternatively a lecture space for up to 250 students could be provided.

It is assumed that a social space would be required for one year group of 180 students, along with catering facilities (dining service with seating) for the whole sixth form.

A study space, with appropriate technology should be provided

A workroom for approximately 10 staff is required for subjects teaching exclusively in the building.

Offices for the Head of Years 12, 13 and an SLT member are required.

Office for PA to sixth form team

Space Requirements

Based on the assumptions above and in accordance with Building Bulletin 103 (BB103) requirements:

10 teaching rooms to seat a maximum of 25 students = 47 sq.m minimum per room (or 1*250 capacity space)

Social space for 180 students = 100 sq.m (146 sq.m with capacity for 131 recommended for 360 students)

Dining Space for 360 students = 139 sq.m (maximum capacity = 144 at any time)

Study Space & library resource centre = 174 sq.m (capacity combined = 86)

Offices (with meeting area = 1 person occupancy, 4 person capacity) = 11 sq.m each

Office for PA to sixth form team = 8 sq.m

Workroom = 11 cubic metres per person, approximately 4.5 sq.m with 3 sq.m kitchenette

Toilets, circulation space, lobby, plant rooms, cleaning cupboards, service ducts, switch rooms, stairways, lifts, storage, etc = 1269 sq.m

This information is summarised on the next page.

Room Type	Minimum space per room (sq.m)	Number of rooms	Total sq.m
Teaching Space	47	10	470
Social Space	100	1	100
Dining Space	139	1	139
Study Space	174	1	174
Offices	11	3	33
PA Office	8	1	8
Work room with kitchenette	48	1	45
Other	1269	1	1269
Total			2238

This is approximately double the size of Bancroft (1032 sq.m)

Cost

The current average estimate to build school facilities is £2,215.50 per sq.m. This equates to approximately £5m for this set of requirements for a new build on green space and does include furnishings or equipment. This also excludes any new utilities (e.g. new sub-station) that may be required. If utilising traditional block and brick build as per the rest of the estate, this cost is likely to increase to c. £6-7m

Challenges

There are limited green spaces left on which to build on the school site. Guidance on school playing field [School land transactions: guidance \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/guidance/school-land-transactions) suggests that we should have 72,000 sq.m (based on our funding agreement capacity of 1260). We currently have 38,500 sq.m. This could be a hindrance to getting planning permission, particularly given BREEAM (Building Research Establishment Environmental Assessment Method) requirements.

There are two obvious potential alternatives:

1. Utilise the space currently occupied by 118 Broomfield Road and the sixth form house. There are several potential issues with this:
 - a. This only occupies a ground area of 379 sq.m.
 - b. Extending to the boundary line would create a footing of 594 sq.m, however this would still require a four storey building, unlikely to gain planning permission.
 - c. The trees fronting the school would have to be removed and are currently under a tree protection order.
 - d. Planning permission would be challenging given the distance from the road of all other properties in Broomfield Road.
 - e. Additional funding would be required to house the occupants of the sixth form house during build works, likely to be in the region of £50k based on previous quotes
2. Utilise the space occupied by the existing building which houses V5,6,11 & 12 and part of the quad. This would create a foot print c. 530 sq.m. Using the whole of the quad space would create a footprint of c. 800 sq.m. Challenges that this would introduce are:
 - a. Need for office / reprographics and teaching space during the works. Estimated at c. £200k+
 - b. This area of the estate has a considerable amount of hazardous materials – this would significantly increase build time and cost for safe removal. It is unlikely that this would be able to happen within normal school occupancy periods.

Funding for a project of this size is a large concern. Given the recent grant receipt relating to the Selective School Expansion Fund, it is less likely that Government funded grant applications (if any arose which is unlikely during the current financial environment) would be successful. Grants are available for large projects from foundations such as the Wolfson Foundation and the Garfield Weston Foundation (GWF), however the upper limit on recent projects for educational establishments recently has been £300,000 (GWF). The majority of funding would need to be sourced by School.

At present, this seems a financially unviable issue to address and would require longer term planning and solution gathering.

Catering Capacity

According to BB103, the recommended minimum dining space for a school cohort of 1260 is 337 sq.m, with a capacity of 353 at any one time. The current dining space is 270.2 sq.m – considerably under capacity. This is managed effectively with two sittings at lunch, having separate facilities for the sixth form (although this in itself is undersized for up to 360 students) and allowing Year 11 to eat in their form rooms, however this still requires strict management of seating availability. There are three potential options:

1. Introduce three sittings instead of two. This is feasible given that all meals are typically served by 1pm at present.
2. Allow other year groups to eat in form rooms. This is not a desirable solution as it impacts the learning environment due to rubbish and odours, as well as reducing the profit margin due to use of disposable containers.
3. Proceed with the previous proposal to convert the old gym changing rooms into additional seating space. This adds an additional 64 sq.m to the dining space, bringing it approximately into line with the BB103 recommendations. Prior to Covid this was quoted at approximately £150,000 cost due to requirements to remove asbestos and re-route major pipework. It is estimated that would cost in the region of £200,000 due to inflation in materials and labour costs.

In order to meet BB103 requirements and improve student experience, option 3 should be a 2-3 year goal, with option 1 as an interim measure if required.

Swimming Pool

The condition of the pool is of considerable concern – as evidenced by the CDC report which shows a high proportion of c, Cx & D ratings. Due to its 1960's construction, the fabric of the building is now in poor condition.

There is a strong business case to invest in the pool and upgrade the facilities and plant. It the second highest used water space in the Chelmsford area and therefore has importance within the community for the support of swimming schools and local primary schools as well as the usage by CCHS students.

An insurance claim in relation to ground movement has been upheld as partly successful, however the proposed resolutions are largely cosmetic.

The Governors have recently agreed to replace the now obsolete boiler, which is failing, at a cost of approximately £16,000. This in itself will help improve the energy efficiency and carbon emissions of the facility

Further work is required to determine the optimal solution to the structural and M&E issues faced by the pool in order to launch a fundraising campaign. It would be optimal to reduce the carbon

emissions of the building, improve energy efficiency and reduce water usage through more efficient technology.

The other option for the pool would be to retire or repurpose the facility. This not a palatable solution given the importance to the local community of the swimming facility and our place within the community. Demolishing the building itself would be costly with no value for money return, as potentially would repurposing it.

Infrastructure condition – the 1950-70 buildings

The condition of the elements of the Vernon Harcourt building that were constructed between 1950 and 1979 are of concern, as is the energy efficiency of the buildings. The art rooms in particular are in poor condition with cracked windows and heating issues. These particular parts of the school have the highest level of managed asbestos, introducing additional challenges to any works to improve the fabric of the building, particularly as the school is occupied through the Easter and Summer holidays by a children's activity day camp. Being single storey, this area of the estate is probably the least efficient use of space and a strategy to upgrade this area would be beneficial (cf. sixth form space proposals) however may be cost prohibitive given the additional precautions and specialist services that would be required for removal of asbestos.

The windows in the ground floor classrooms have all been replaced, however the funding bids for the offices and art / sixth form study areas have not to date been successful. The boilers servicing this space are subject to a CIF bid for 2023/4.

Boundary Security

The condition and security of the boundary fencing is a point of concern and there have been instances of intruders to the grounds. CCHS owns the boundary fencing (see Appendix A map 4), which would be expensive to replace in a single project. This was descoped for CIF 23/24 due to the need to prioritise the main boiler replacement.

Energy and decarbonisation strategy

An energy audit was commissioned in 2022 that has provided detailed recommendations, cost estimates (capital and ongoing energy) and payback periods (see Appendix B for summary table). This has informed our short- term strategy and a medium to long term strategy will be developed over the next year. The optimal decarbonisation strategies are currently cost prohibitive so will require long

term planning and monitoring of developing technologies. Current technology does not meet set point requirements in terms of the chemical balance of the pool or legionella control in the main buildings and would require supplementary fossil fuel technologies.

In the short term, the focus of the School is on improving the fabric of the buildings, efficiency of the pool and replacement of end-of-life boilers. The following are low / no cost opportunities identified or have short pay back periods that are financially viable at this time. It should be noted that the swimming pool accounts for 29% of the overall Gas consumption of the estate and therefore represents an opportunity for cost avoidance once our fixed rate Gas contract expires in September 2024

Opportunity	Description	Estimated saving p.a.			Cost	Payback (y)
		£	CO2e (tonnes)	kWh		
1	Good housekeeping and staff and student awareness	1,126	0.8	8,348	1,200	1.1
2	Heating - adjust setpoints and time schedules	882	7.8	42,427	1,200	1.4
3	Boiling water and chilled water units - install time switches	697	0.5	5,167	350	0.5
4	Swimming pool - adjust pool temperature setpoints	428	3.8	20,559	600	1.4
5	Swimming Pool - install a pool cover	1,219	10.8	58,592	27,819	22.8
6	Swimming Pool - setback ventilation overnight	2,895	1.9	21,457	600	0.2
9	Lighting - upgrade remaining fluorescent lamps to LEDs	4,372	2.6	32,409	51,201	11.7
10	Main Building - insulate exposed pipework and fittings	349	3.1	16,763	1,869	5.4
17	Cadbury Building - insulate exposed pipework and fittings	38	0.3	1,844	216	5.6

In addition to these actions, the main building boilers are subject to a CIF bid for 2023/4 (valued at c.£420,000) and the swimming pool boiler is being replaced with funding provided from the CCHS Capital Development fund at a cost of c. £16,000

Financial Sustainability

CCHS committed £265,000 from reserves as part of the c.£6.6m building work completed in 2021, plus a loan of a further £200,000. £94,250 was committed from reserves as part of the 2021/22 CIF works (roof replacement) and a further £150,000 has been committed for the 22/23 CIF bid.

Reserves of £300,00 have been designated for replacement of the artificial pitch, which is regularly assessed by specialists, and is estimated to have a remaining lifespan of 2-3 years.

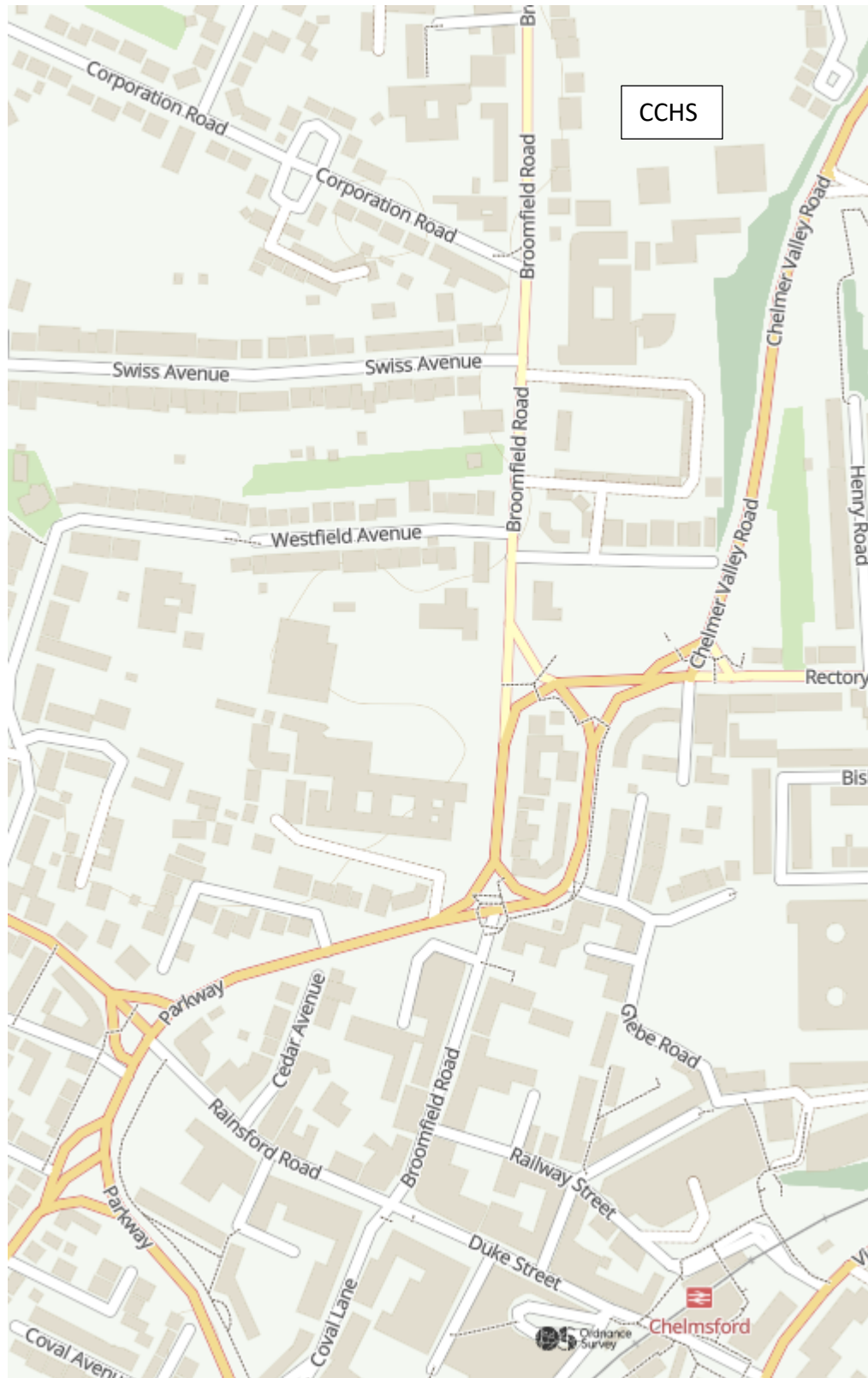
£85,695 has been specifically designated for estate development, with a further £490, 905 as at 31st August 2022 remaining in CCHS Capital Development Limited and general unrestricted funds, which will be used to support the commitments made as part of the CIF bids.

In the current operating environment, it is imperative that a sufficient level of reserves, designated as a minimum of £200,000 by the Governing Body as funding arrangements remain uncertain. This informs decision making regarding estate development and what is financially viable. In the short term, clear priorities and no cost/ low cost improvements must take precedence for upgrades, aligned with fund raising strategies to achieve the immediate priorities.

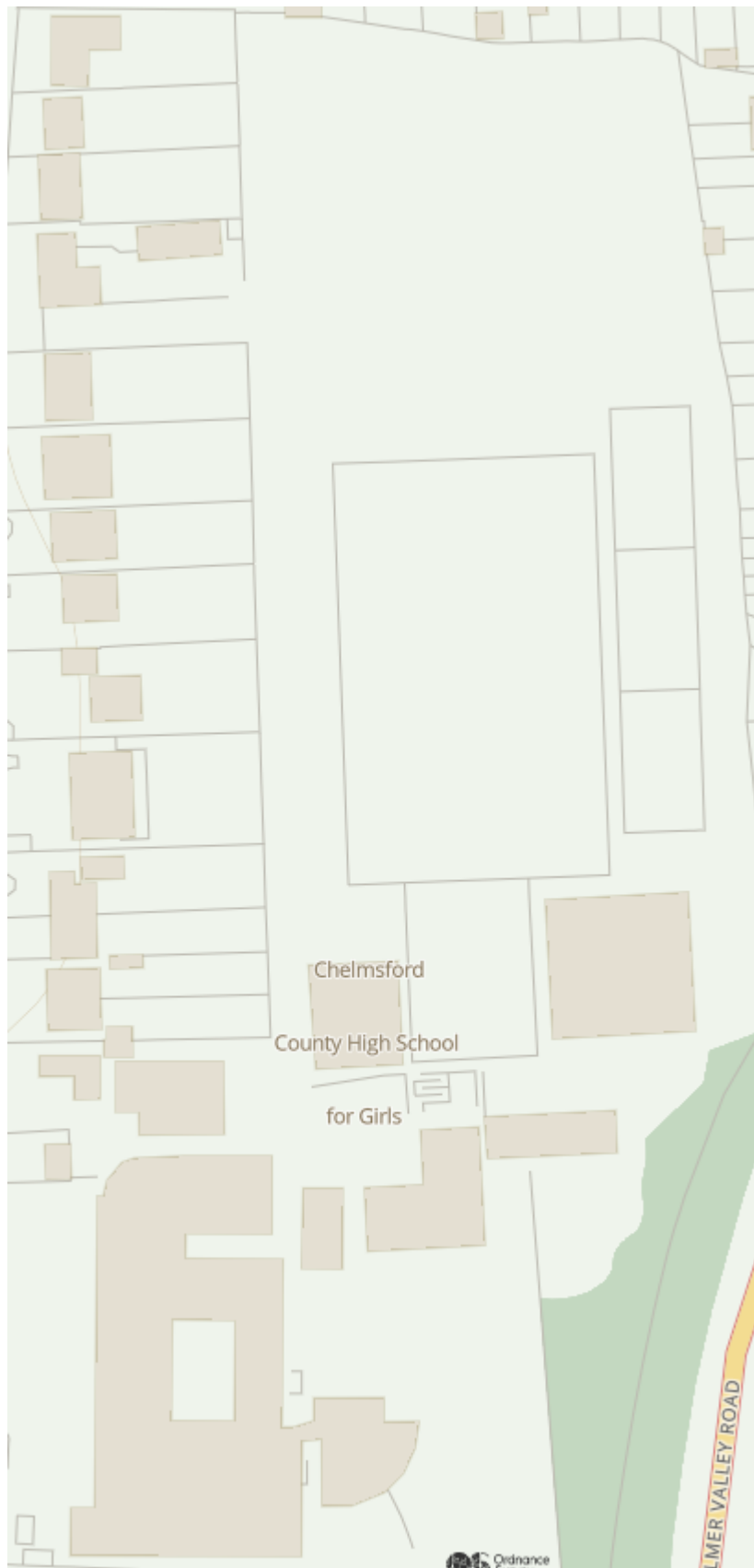
7. Supporting documentation and appendices

Appendix A - Site Maps and location

Location within the City



Ordnance Survey view of the estate



Chapman Sports Centre

1st Floor

Balcony
Dance Studio
Fitness
Store
Gym
Store

Sports Hall

Main Store
Plant
External CR3
CR1
Office
CR2
Rec
L

Bancroft 1st Floor

B5
Prep room
B6
1st Floor
B9
B7
B8

Bancroft Building

B1
Prep room
B2
Ground Floor
Storage
Maths Work room
B3
B4

Cadbury Building

Ground Floor

C3
Bio Prep
C4
C2
Prep
C1

First Floor

C7
Faculty Office
C8
C6
Chem Prep
C5

6th Form Loft

Ass HO 6th Form

Drama & Dance Studio

Changing Room
S1
S2
6th Form Common Room

6th Form Common Room

6th Form Cafe

Careers Library

1st floor 6th Form House

6th Form House

The Anstee Building

V8
V9
V7
V10
A3
RDA Office
HO Yr 8/9
Prayer Room
A1
V4
V3
V2
V1
V15
V16
V17
V18
V19

The Vernon-Harcourt Building

Repro
V11
V12
V13
V14
HO Yr 11
V6
V5
V4
V3
V2
V1
V15
V16
V17
V18
V19

Pattison Building

P2
P4
P3
Studio
P1
P5
P6
Music Office
P7

Vernon-Harcourt Upper Floor

A10
A11
A12
A9b
A8
A9a
A6
A7
Language Work Room
A5b
A5a
A4
V15
V16
V17
V18
V19

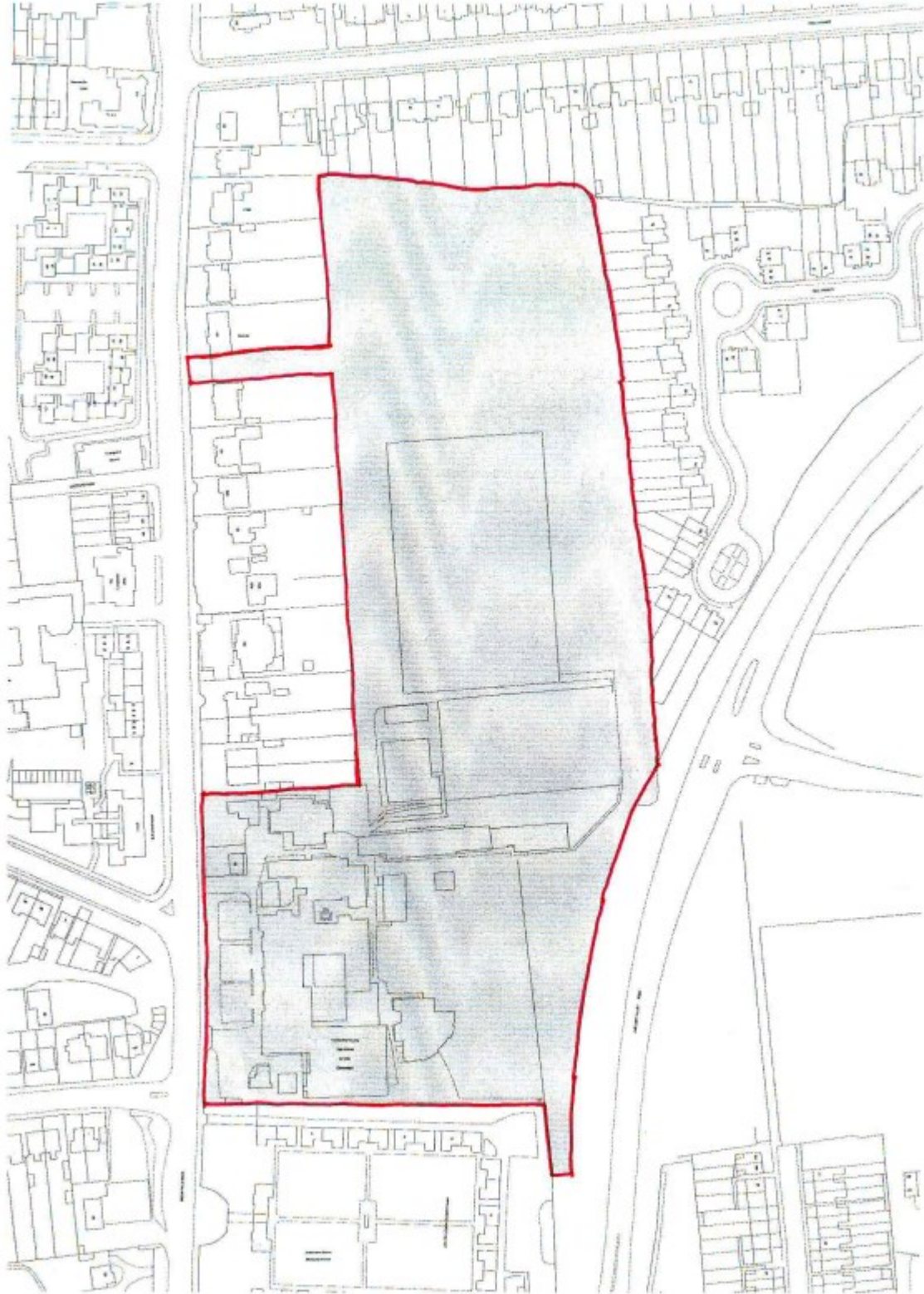
6th Form Study Centre

V23
V24
1st floor
6th Form Study Centre
V21
V22
V20
RFR A L VANCE Business Manager

Legend

- Car Park
- Stairs
- Student Toilet
- Disabled Toilet
- Staff / Visitor Toilet
- Medical Room
- Disabled Lift

Land Registry Boundaries



Appendix B – Energy audit summary

Opportunity	Description	Estimated saving p.a.			Cost	Payback (y)
		£	CO2e (tonnes)	kWh		
1	Good housekeeping and staff and student awareness	1,126	0.8	8,348	1,200	1.1
2	Heating - adjust setpoints and time schedules	882	7.8	42,427	1,200	1.4
3	Boiling water and chilled water units - install time switches	697	0.5	5,167	350	0.5
4	Swimming pool - adjust pool temperature setpoints	428	3.8	20,559	600	1.4
5	Swimming Pool - install a pool cover	1,219	10.8	58,592	27,819	22.8
6	Swimming Pool - setback ventilation overnight	2,895	1.9	21,457	600	0.2
9	Lighting - upgrade remaining fluorescent lamps to LEDs	4,372	2.6	32,409	51,201	11.7
10	Main Building - insulate exposed pipework and fittings	349	3.1	16,763	1,869	5.4
17	Cadbury Building - insulate exposed pipework and fittings	38	0.3	1,844	216	5.6