Ms. Mary Pichetti, Director of Capital Planning, Concord-Carlisle RSD
Ms. Diane Sullivan, Senior Capital Program Manager
Ms. Holly McClanan, Legal Counsel
Mr. Jack McCarthy, Executive Director
Massachusetts School Building Authority
40 Broad Street, Suite 500
Boston, MA 02109

November 25, 2012

I find this extract on page 6 of the October 25, 2012, letter from the MSBA to the Concord Carlisle Regional School District:

> "Further, beyond what is legally required, the District must act in accordance with its communication plan to ensure access, openness, and timeliness of information regarding the Project to all District residents. The MSBA encourages the District to re-evaluate its communications plan and take whatever steps are necessary to alleviate local concerns about the openness and timeliness of project information."

It is clear to me that correction of the District's unfortunate communication performance with the community is important to the MSBA, and correction of it is a condition for restoring and continuing funding of the CCRHS building project.

In view of this requirement, and the assurances you received from our Building Committee at Cory Atkins's meeting with you on August 29, I was shocked that Stan Durlacher, Chair of the Building Committee, recently presented and published a "Model School Analysis" that misrepresents the MSBA's Model School Program. His cost calculations for the design and site examples in it purport to show that a Model School, if it had ever been considered for CCRHS by the Building Committee, would have cost us an extra $12 to $14 million dollars, beyond what we are now paying for the much less efficient OMR Architects' design. No doubt this result will surprise you, as his reasoning and calculations are faulty. You know well that the many communities building excellent Model Schools have saved enormous sums on the total costs of their buildings and much more in the direct tax cost to the communities.

Mr. Durlacher's "Analysis" was clearly written in an effort to deflect criticism of the Building Committee's failure to consider (or even to discuss) a Model School. Members of the Building Committee did know about the Model School Program in mid-2011 when they were making their plans. This evident propaganda directed to the community is not consistent with the open communication now required by the MSBA.

My attachment here is a Review of his “Analysis”, pointing out specific errors in his reasoning. His numbers are so far from the actual comparative costs that the individual figures can be adjusted widely, without affecting the fact that his conclusion is not supported. Mr. Durlacher would benefit from a personal tutorial from the MSBA on how the Model School Program works, what it covers, and what it can still do for Concord-Carlisle.

This week the Concord Journal surprised us by publishing a hard-hitting, front-page, lead article, directing eleven remarkably tough questions to our school officials:

> http://www.wickedlocal.com/concord/news/x719496297/Eleven-questions-for-our-school-officials?zc_p=0#axzz2CtInPe97

Question No. 5 asks them directly, “Why wasn’t a Model School considered from the beginning?”

At least seven more of their eleven questions deal directly with the problems the community has been having with this construction project for the new CCRHS and the continuing poor and biased communication from the District. The Concord Journal reports that District officials and the School Committee have not been responsive for more than three weeks to attempts to interview them on these issues, certainly not a sign of “open communication” with the community.

As the actor Strother Martin said to Paul Newman in “Cool Hand Luke”, “What we've got here is failure to communicate.” Please call the CCR District on it.

Until you have taken the time to investigate these problems, starting with Mr. Durlacher’s self-serving “Analysis” and my “Review” of it attached here, I hope you will not yet consider reinstating or resuming your funding of his increasingly unpopular project. Let the District start over and do the job right, making better use of the money we have voted for the new school.

With best regards,

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AN ENGINEER REVIEWS THE "DURLACHER MODEL SCHOOL ANALYSIS"

A LAPSE IN MATH, OR LOGIC, OR BOTH:

Chairman Stan Durlacher of the CCRHS Building Committee has publicly presented, handed out, and published an "analysis", supposedly comparing costs for his planned building design with costs that might be achieved with two representative MSBA Model School designs. He concluded that these Model Schools would cost us MORE, by $14,479,482 or $12,593,770.

I have reviewed Mr. Durlacher's calculations and find that a Model School would actually cost LESS than the present design, by either $20,509,906 or $19,600,000, depending on various details. How can we explain this enormous difference of AT LEAST $32.2 million between our conclusions?

Mr. Durlacher made several logical errors in his study, as I have detailed in this review. His calculations are faulty, and in the interest of accurate and open communication with the citizens of Concord and Carlisle should now be recognized to be in error, and should be corrected or removed from the Building Committee's web site. The facts are out. The Building Committee should also renounce their present unnecessarily expensive design and start over by applying to build a Model School.

Critique:

On October 30, 2012, Stan Durlacher presented his individual "view of whether it makes sense to pursue the idea" of an MSBA Model School to a meeting of the CCRHS Building Committee, then posted it on the Building Committee's informational web site:

http://www.cchsbuilding.org/pb/documents/docs/One%20Persons%20Model%20School%20Analysis.pdf

His analysis is only a retrospective consideration of a Model School Program design for the CCRHS replacement, as the recorded minutes or earlier Building Committee meetings and the filed project documents do not show that a model school option was ever considered by them.

This report is an individual engineer's response to Mr. Durlacher's new "analysis", pointing out in detail why it does not accurately represent the choices that can still be made to save the citizens of Concord and Carlisle many millions of dollars.

Mr. Durlacher's posted analysis is without the page numbers 1-20, but I have marked them on my copy with pencil and will refer to them. The printed handouts at the Building Committee meeting may have been missing some of these pages.

Page 2 recounts the many benefits of the Model School Program. These benefits are more fully detailed on the MSBA's own web site at:
http://www.massschoolbuildings.org/programs/model_school

Page 3 suggests that a perfectly flat site is required to build a model school, as was available for the four model schools that Mr. Durlacher visited, and is emphasized here by his photograph of one of them through a surveyor's theodolite. But the MSBA does not say that a flat site is essential for a model school design.

Page 4 compares the "Baseline" CCRHS custom design by OMR Architects with the average of ten model schools. The model school costs are "normalized" with an assumed adjustment for inflation. The CCRHS baseline design is clearly more expensive for the raw cost, even without yet considering the much higher reimbursement MSBA will provide for a model school. Mr. Durlacher does not explain why his "baseline" of $74,989,918 for the existing school plan is so much smaller than the actual amount we voted for this school project, not counting the extra gym. We voted $88,494,844. What is in the large difference of $13,504,926? Some project costs have simply been left out. In order to call that number the "baseline", the same costs would have to be removed from the Model School budgets being compared.

Page 5 compares the construction costs of eleven current Model School projects, then "escalates" the costs at an assumed 3% per year rate to calculate what they might cost if built during our own construction period. No reference is cited for the 3% rate, and it appears high in this present economic lull. But at the 3% rate, the delay of more than four months caused by the recent OMR budget problems and the MSBA suspension of payments appears to have cost us at least an extra $1 million, or 1% of the project amount. So far. The delay cost may become greater because the MSBA's new requirements for the funding have not yet been satisfied.

Page 6 Shows a pictorial comparison of two school designs, the OMR baseline design, and a broader and flatter design for the Hudson High School, having about the same enrollment.

Page 7 lists some broad working assumptions that could apply if the Hudson school were simply placed near the center of the athletic field area to the northwest of our present school. This placement would disrupt the CCHS athletic programs for the duration of construction, stated as 3-4 years. But most model schools have been built in a shorter period, some in 2 years.

Page 8 shows a view of this siting of the Hudson school in an awkward place on the CCHS campus. Much better placements can be found.

Page 9 shows an apparent net cost saving of $10,004,980, even with this mysteriously understated cost of the CCHS. But there are problems with the footnotes that follow it:

The Athletic Fields location has no known "geotechnical issues" to solve. The reference is apparently to the discussion by the consultant Nobis in the Feasibility Study of June 17, 2011, that relates to the addition of up to *12 feet* of fill in a nearby steeply sloping site. Such deep fill would not be needed to install the Hudson school where Mr. Durlacher shows it.

This part of the site is not especially low, and the fields are nearly level in the area picked. There is no discussion of why there was not an equivalent consideration at all four "perfectly level" school sites that Mr. Durlacher recently visited, nor why any unusual drainage construction would be needed.

Replacement costs for new ADA compliant athletic fields are not a legitimate extra cost for using the Hudson school design here because the costs for new tennis courts and the JV athletic field, all planned for destruction during the CCRHS work, are not included in the *baseline* OMR design costs.

There is no reason to expect any additional construction time because there is little change in "scope" compared with other model schools that have been built quickly.

All model schools (except the first example of each design form) are placed in a "different site", so they do not require "additional design fees" each time. For each project the design fees are capped at 4% of the project cost by MSBA and have been included in the reported budgets.

Page 10 is evidently a restatement from the Nobis consultant's report in the Feasibility Study, included in sections 03 and 07. The Nobis time schedule proposed 4-6 months, not the stated 9 months, but that was for construction on Site 12, a steeper place, with deep fill to raise the grade. There was a consequent need for a surcharge load of dirt there to preload the soil. Nobis also said that the soils at the site are "not susceptible to liquefaction." The Nobis discussion about preloading deep fill does not appear to apply to the place Mr. Durlacher has chosen to put the Hudson school. I have found no reference to a need for an "18 ft surcharge" over the whole building footprint, plus the apron area, even on Site 12. Nobis does discuss just how a building can be constructed on this property at site 12, and does not mention any such problem.

Page 11 contains many "geotechnical issue costs" for putting the Hudson school on the present athletic fields. They add up to $5,526,356. For the reasons just stated, none of these costs would actually be required if we really wanted to put the Hudson school there.

Page 12 summarizes the "increased hard cost items". The only real costs here are for replacement of the destroyed athletic fields, and again they cannot be added because we are comparing this option with the OMR baseline design, and the OMR baseline design requires destroying the present tennis courts and JV athletic field but does *not* include replacing them. This page adds to $8,464,029, but this money cannot be included in the comparative budget to put the Hudson school on the athletic fields.

Page 13 lists five "increased soft cost items". But the 4.0% Design Fees are included in the comparative Model School construction budgets, and must not be repeated. There is no "complex site design premium" for putting the Hudson school in this flat and simple location. The "value of existing design work lost" is real, at $3,489,000, certainly for the school building design. But perhaps some of the site analysis can be used going forward. The "increased CM fees on the incremental hard costs" are not real because those incremental hard costs are zero.

Page 14 adds up the costs for the Hudson-on-the-field option. With the corrections noted, the total is only, most generously, $68,473,938. That still represents a saving of $6,515,980 for using the Hudson model school instead of the stated but incomplete cost of the OMR design. (That's a lot more than we have budgeted to pay for our unreimbursed second gym.) Of course, if we had applied for a Model Design School in the first place, back in June, 2011, we would also have saved the $3,489,000 in wasted design cost, for a total benefit of $10,004,980. That is just a part of what our Building Committee has cost us by failing to apply for a model design and working with MSBA and their architects to find a site for it on our property.

At the Special Town Meeting in November, 2011, we were told that a model school design wouldn't work for us because the site was "too hilly". That may be true, but the answer was specific to the Building Committee's selected site, 14C, not to other locations on the property, including the satisfactory Site 12 that the Building Committee and OMR had admitted is equally or more desirable.

Page 15 begins a new comparison, using the Whitman Hanson model school for comparison. This excellent design was copied quite successfully by Norwood, by Plymouth North, and more recently by Natick, all with small variations in size and layout. For an unknown reason Mr. Durlacher has chosen to site it partly on top of a high hill. That site is sloped by about 38 feet, and would require an enormous amount of imported fill.

Page 16 is a contour map of the site, showing the WH school approximately centered on our tennis courts and extending out over the steep sledding hill.

Page 17 shows the added "Geotechnical Items" that will be revealed on **Page 18**, the "Hard Cost Items" that will be revealed on **Page 19**, and the "Soft Cost Items" that will be revealed on **Page 20**. This time the "geotechnical items" and the "hard cost items" are probably real. The "4% design fees" on Page 20 appear again to be a duplication of money already in the quoted WH building cost. We still add this up to $84,784,322. This is more than the quoted OMR "baseline" by $9,794,404, and almost as much as the $88,494,844 we actually voted for the High School building project. If we do copy the Whitman Hanson model design, we certainly won't want to center it high up on the tennis courts.

In summary, I find these specific problems in the published "CCHS Model School Analysis":

- Understatement of the CCRHS project budget in the comparisons
- Less than optimal choice of locations for sample Model Schools
- Overstatement of "geotechnical" costs for the locations chosen
- Inclusion of athletic facility replacement costs only in the Model School budgets
- Possible overstatement of the 3% annual "escalation" rate

A better solution:

So far, putting the Hudson design on the athletic fields appears to be the least expensive option, but it is not the best we can do. We have also been looking at the Whitman Hanson design, and the others derived from it. For a better proposal to put a model school on the CCRHS property I've copied an aerial picture of the Norwood High School, completed last year and a near duplicate of the Whitman Hanson School, and have adjusted its size to match the more recent Natick High School. I have combined an illustration to show how the Natick Model School can easily fit on the "Site 12", or "G", just northwest of our present school. (**Figure 1**.)

When we contacted *two* experienced Model School designers and showed them our documents, they were surprised that our Building Committee had picked Site 14C over Site 12! They both said that even the site compaction time of 4-6 months suggested by Nobis was excessive, let alone the 9 months inexplicably priced by Mr. Durlacher in his analysis. Compaction at East Bridgewater took only 45 days.

Because neither location considered by Mr. Durlacher appears to be a good placement for a model school, I have chosen to put my copy of the Natick school on "Site 12". Site 12 was considered the *best* option by the Building Committee meeting of May 25, 2011, -- and more recently by the two other school design firms -- but for some reason was never discussed again in an open meeting. In the June 13, 2011, "Update" issued by OMR for public presentations in Concord and in Carlisle, on page 13, the Site 12 is marked as "G". (Shown here in **Figure 2**, with North at the bottom.) The less suitable location strangely picked by the Building Committee for the OMR custom design work is marked "D", but was formerly known in the Feasibility Study as location "14C".

Because Site 12 is on a hillside, dirt may be cut from the high side and filled into the low side to level it as much as may be desired. If even more fill is needed, it is readily available from the high hill just south of the present school, exactly where OMR already intends to remove it to make room for their planned construction. Any addition surchage dirt needed for compaction of the fill can easily be borrowed from the baseball field area just west of Site 12, then returned when it has served its purpose. The amount of site leveling work needed can be reduced further by positioning the new Model School slightly to the north of the place I illustrated, there covering more of the adjacent lacrosse field and getting farther from the slope. The school foundation could also be lowered a couple of feet.

With a more realistic but still generous pricing for extra Geotechnical costs, given that the maximum slope correction of 16' at Site 12 is *less than half* the 37' slope correction needed by Mr. Durlacher at his Hill site, and given that the soil preloading time will be about *2 months* rather than his arbitrarily assumed 9 months, those added Geotechnical costs will be less than $3,000,000 for Site 12. There are no extra "hard costs" nor "soft costs" to be added, as the amounts Mr. Durlacher listed are already included in the cost of the Model School, or were not included in the OMR construction cost for this comparison. This maximum of $3,000,000 replaces the much larger amounts (adding to $22,598,750) from Mr. Durlacher's pages 18, 19, and 20. The cost for putting the Whitman-Hanson school or the related Natick school design on Site 12 then would be $67,984,938, to be compared with the $88,494,844 we voted for the present OMR design. This potential saving of $20,509,906 is far more than the $3,489,000 in the "sunk cost" (the value of the Existing Design Work lost), plus even a generous extra $3,000,000 for special preparation of Site 12. Of course, not all of that design work is really lost because much of it was a study of the site options, one of which can be used. Only the OMR building design work to date will be wasted.

Let's now do a reality check:

For a direct confirmation of this new analysis we can match it with the published cost for the Natick version of the Whitman-Hanson High School, as it was reported in the Boston Sunday Globe on September 2, 2012. The total cost of the Natick High School, a just slightly larger building than we are planning for Concord-Carlisle, was $78.5 million. The MSBA reimbursement was $38.2 million, leaving only $40.3 million to be paid by the Natick taxpayers.

The Concord-Carlisle taxpayers will be paying $88.5 million, less *at most* $28.6 million from the MSBA. That leaves $59.9 million for our cost, contrasted with the $40.3 million paid by Natick. The extra cost to be paid by Concord-Carlisle is $19.6 million, far more than enough to pay for all extra site preparation work for Site 12, and for all the design work to date on the OMR structure

that will not even be complete when it is opened. This calculation of $19.6 million saved is in good agreement with the $20.5 million saving estimated from the corrected figures above.

The Natick building contains a much larger auditorium and gymnasium, potentially eliminating our need for a second gym. The new Natick gym is larger than our two planned gyms together! If we don't need that second gym, we can save the $4,083,680 that we voted to build it.

The money we will save by starting over with a Model School, like Natick's or from another Model Design, will therefore be about $19.6 million + $4.1 million = $23.7 million. But let's be fair. We will be starting about two years later than Natick and may finish one year later than we had planned. With Mr. Durlacher's generous 3% annual inflation factor it may cost us another $2.8 million if we start now, and we have costs of about $3.5 million sunk with the OMR design. Our savings will not then be the entire $23.7 million, but "only" $17.4 million.

That $17.4 million saving is still plenty of incentive to rethink the current project. The MSBA cannot guarantee to hold the planned $28.6 million reimbursement money for us, but school building reimbursement is based on need, and the need for a new CCRHS is understood and approved. If we begin again and do this construction project the right way we will be eligible for a much greater reimbursement, likely at least the $40.3 million that Natick received. We will save all those millions of tax dollars and will end up with a much better school for the years ahead. If the reimbursement rate is a little lower for Concord-Carlisle than for Natick, the difference won't detract much from the $17.4 million saving.

We will also save the several million more dollars that were not requested by the Building Committee when we voted to build our new school, but that we now know will have to be requested later to finish the job. For comparison, the Natick-type Model School package will be just about complete!

I am pleased that Mr. Durlacher has discovered the MSBA Model School Program, but he does not yet appreciate how much money it can save us and how nice the Model Schools are that have been built with its support. Perhaps he should talk directly with the MSBA and their Designer Selection Panel to go over his published "Model School Analysis" directly with them, together with this detailed Review of it. When he understands the actual economics involved, he may want to change his construction program to benefit Concord and Carlisle.

We need to revoke the present Project Funding Agreement that ties us to the OMR design and apply quickly for the Model School Program. By Mr. Durlacher's own 3% "escalation" numbers, our continuing delay to make the change is costing us more than $230,000 a month.

William T. Plummer
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Concord, MA 01742

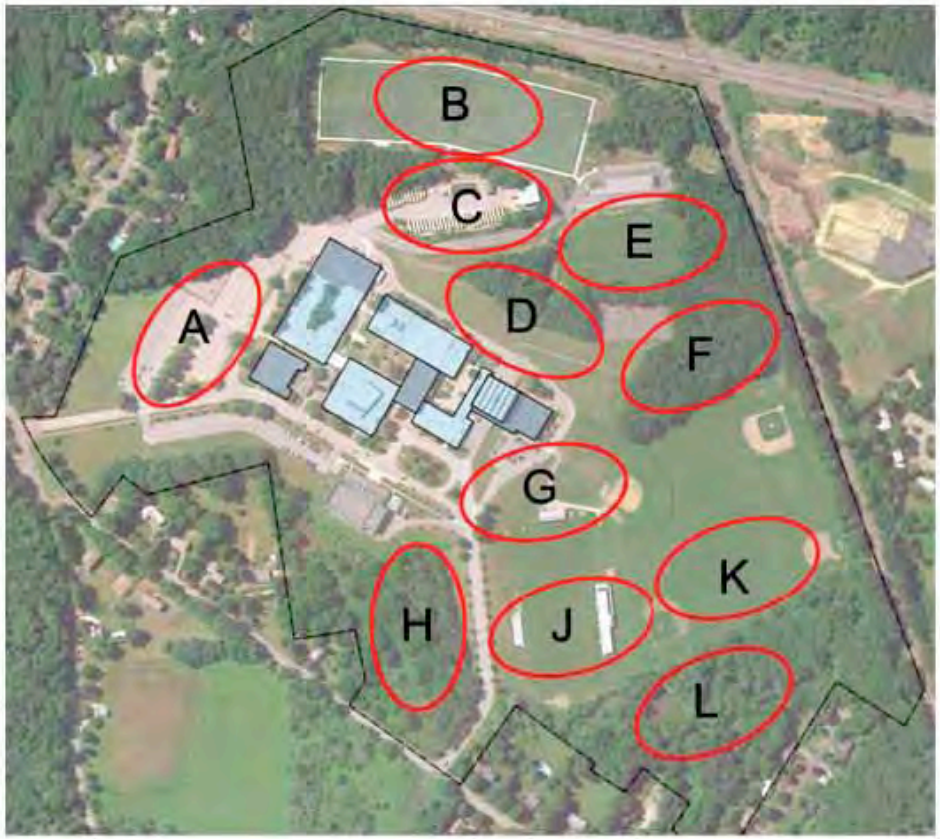
25 November 2012

Natick-On-Site-12 Layout

Figure 1

Figure 2

Site Locations Considered



Location A:
+ Site is flat
- Close proximity to neighbors
- Requires relocation of existing parking
- Poor solar orientation
- Remote from existing fields

Location B:
- Located on newly constructed turf fields
- Close proximity to neighbors
- Close proximity to Route 2
- On top of hill; remote from rest of campus

Location C:
- Sloping topography
- Located on existing district bus parking
- Site is tight between turf fields and existing roadway
- Poor solar exposure, south faces into the hill

Location D:
+ Adjacent to existing school, infrastructure and access
+/- Sloping topography
+/- Solar orientation is not due south
+ May balance cut and fill
+ Connects upper fields with campus

Location E:
+ Distant from neighbors
+ Good solar exposure
- On top of hill; remote from rest of campus
- Close proximity to MBTA
- Close proximity to Route 2

Location F:
+ Distant from neighbors
- Sloping topography
- Poor solar exposure, south faces into the hill
- Close proximity to MBTA

Location G:
+ Good solar exposure
+ Manageable topography, terraced slopes
+ Close to existing infrastructure and access
+ Connects lower fields area with main campus
Site requires fill

Location H:
- Close proximity to neighbors
- Encroaches on wetlands
- Sloping topography
- Poor solar exposure

Location J:
+ Good solar exposure
+ Flat site
- Close proximity to neighbors
- Close proximity to wetlands
- Remote from rest of campus

Location K:
+ Good solar exposure
+ Flat site
- Close proximity to neighbors
- Close proximity to MBTA
- Close proximity to wetlands
- Remote from rest of campus

Location L:
- Located in existing woods
- Close proximity to neighbors
- Encroaches on wetlands
- Remote from rest of campus