

Card Entries Revisited

East Campus House Committee

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1 Introduction

During the spring of 2003 the East Campus House Committee (EC HouseComm) learned that MIT intended to change the manner in which East Campus residents could gain access to their dormitory. Currently, MIT intends to replace the long standing dual-access entry system with a card-only entry system. As a result, residents will be required to use their MIT student ID to enter the outside entry way of the dorm, a key to gain access to their hall, and another key to unlock their room.

Many serious concerns have arisen as the dorm switches to the card-only access system. Concerns regarding the functionality, security, cost and convenience of the new system are outlined in the following sections along with possible ways to alleviate these concerns. HouseComm hopes that the MIT administration will directly address and alleviate our concerns before continuing forward with the change over to the card-only access system.

2 Background

Recent months have seen many changes around the East Campus Dormitory(EC). Many old problems have been, or are being, addressed. Currently in progress are repairs to several bathrooms and a network upgrade. Recent repairs have made the heating system quieter this winter, the basement drier, and the trash room cleaner. The washing machines were upgraded to newer, environmentally-friendly models; even several old trash chutes were replaced, making the dormitory a safer, more sanitary place. These improvements addressed the needs of the dormitory's residents, and have been an overall success. Unfortunately, not all recent changes have been as well-received. A recent source of dissatisfaction and conflict has been the switch to card-only entry into EC, to be finalized at the end of the summer.

Under the current plan, the six outside doors, which had theoretically¹ been accessible by both entry key and magnetic card, will become solely card-accessible. All of the locks will be changed so that the hall doors and outside doors require two different keys. Residents, however, will only possess hall keys. The proposed plan therefore requires a resident to carry three items: an ID card to enter the dorm, a hall entry key to enter the hall, and finally a room key to enter his or her room. While many students living on the MIT campus use a card to enter their dormitory, in most cases they don't have to, as the front desk can conveniently "buzz" them in, an option unavailable at EC due to the physical layout of the dormitory (this issue is further discussed in Section ??).

The decision to implement a card-only access system is a significant change for the residents of EC. As such, HouseComm would have welcomed the opportunity to participate in discussions with the MIT Housing Office to facilitate the transition. However, there were unfortunately few requests for student input or feedback during the planning phase of this project. Further, there was no public announcement regarding the change until plans were immediately ready to be implemented. HouseComm was notified indirectly through the House Manager roughly two weeks before the plan was to take effect.

Upon hearing about the planned changes, residents voiced their concerns. The reservations about implementing the new system were summarized in the document titled "Resident Concerns with Regards to Card Entry at East Campus" (Statement of Concerns), which was delivered to various administrators in the Housing Office, including House Manager Joe Graham, Associate Director for Operations Carl Seagren, and Director of Housing Karen Nilsson. A copy of the original statement can be found in Appendix ??.

Carl Seagren replied to the house officers by email two weeks later, revealing details of the plan. However, EC residents feel that Seagrens response did not directly address their concerns. A copy of his email can be found in Appendix ??. Beyond Seagrens email, there was no further serious discussion between the Housing Office and ECs HouseComm with regards to the concerns outlined in the initial statement of concerns. Even so, the plan progressed to encompass two more doors (the doors are being rekeyed in pairs, starting from the northern end of both buildings of the dorm). Discussions among students have heated up as a result of these two additional doors becoming accessible only with a card while their concerns had not been satisfactorily addressed. Judging from a recent email sent by Nilsson and forwarded to EC residents by the House Manager (see Appendix ??) there remain numerous unresolved issues, including the reliability/functionality of the card readers and door mechanisms.

¹A discussion of the readiness of the magnetic card readers prior to this year's transition is included later on in the paper in Section ??.

3 Unresolved Issues

Nilsson's email revives the discussion that died in early April by mentioning numerous contentious issues. Among them are the fundamental reasons given by the Housing Office for implementing the changeover; as can be seen below these reasons can be easily argued and even disputed, calling into question the validity of the entire plan.

3.1 Security

Although the safety and security of dormitory residents has been cited during various discussions between the EC executive officers and the House Manager as a primary reason for implementing card-only access, the card's advantage over the key in this area is far from conclusive. As was mentioned in the Statement of Concerns, André DeHon's 1994 analysis of the MIT card refutes this common conclusion. A full copy of his report can be found at http://www.ai.mit.edu/people/andre/mit_card/security_assessment/security_assessment.html.

Regardless of the relative merits of cards and keys, the dormitory has been shown to be insecure no matter what the access system. While the dormitory was still under dual access, it was common practice for the House Manager to give out entry keys to contractors and other workers without demanding collateral or even logging the transaction. As the dormitory staff does and will continue to retain key access to the outside doors, there is a potential for this dangerous practice to continue.

The alternatives to handing out numerous cards and keys are either constant supervision by staff, which is too time consuming, or propping open the doors. While the previous procedure of handing out unlogged entry keys was at best dangerous and ill-advised, the one currently employed under the partially-implemented card system is utterly unthinkable. For the past several months, any passer-by could walk into the dormitory and enter onto two halls through doors propped wide-open by careless contractors propped open doors to gain easy access to the building.

Due to tenuous security, both under the dual-access system and the card-only access system, there have been three serious security breaches at EC in the last term:

1. A man was found sleeping in the basement, where he had been living for several days. He is assumed to have entered through the Munroe entry door (leads to the front desk and is unlocked during business hours) and walked down to the basement through the Munroe basement door, which had been propped open. This situation could occur again, given that the Munroe basement door is still kept open during business hours.
2. An intruder used a key to enter the dorm and then enter onto a hall, where he proceeded to take a

shower. Investigations by the Campus Police revealed that the man was a contractor previously in the employ of the Housing Office, who had never returned his entry key. Cards will not solve this problem, as the security of the dormitory depends on the Housing Office's management of the system; if temporary access card and hall entry keys were to be given out with the same lax supervision as keys today, the above situation could easily reoccur.

3. The third incident occurred when a resident unwittingly allowed an intruder through two doors and onto the hall. Card-access doors will not stop this from happening in the future.

Besides looking at the management of dorm security as a whole, one must also consider the persistent physical weak points of the system. The current physical mechanisms on the doors, as well as the card readers themselves, have been consistently failing.

Dual-access doors (the kind currently used at EC) have two separate mechanisms for unlocking the door: a correct key rotates the cylinder, withdrawing the latch, which unlocks the door, or an electrical signal (from the card reader) activates a solenoid, which magnetically retracts the movable strike plate, which unlocks the door.

Because the strike plate moves, it can be broken, as happens when a student swipes his or her card and the strike plate does not retract fully or does not retract in time. In the event that the strike plate does not retract properly, the resident must forcibly pull on the door to open it. When this occurs, the latch comes in physical contact with the strike plate, causing wear and tear. If the door is opened in this manner enough times and with enough vigor, the strike plate becomes incapable of holding back the latch and the door becomes "pullable."

Currently, anyone can open the door with a swift yank, a situation that has been happening on and off since 1994, when the card readers and magnetic strike plates were first installed. Now that all residents are using their cards, the strike plates are breaking more often. Because consistent, yet small, mechanical failures lead to progressively worse states of disrepair, the doors must be yanked open in order to gain access more often than in the past. As a result there is currently a public awareness that the doors are pullable, a blatant breach of security.

3.2 Cost

Although the security advantage of cards is disputable at best, one would assume that their cost would be much less than that of keyed doors. Cards are easier to manufacture than keys, and card-only access doors ought to experience less wear-and-tear because there are fewer movable parts. However, as discussed in the

previous section, the mechanisms in the current doors are actually experiencing more wear-and-tear. The Housing Office, however, does not believe this is the case judging by Nilssons email.

As can be seen in the end of Section 3.1 above, card-access doors also tend to break, though in a different manner than key-access doors. The reason that this has escaped notice at other dorms is that the other card-only dorms have central front desks that face the dorm entrance. Incoming dorm residents seldom use their cards because they are generally buzzed in upon recognition by the desk worker. At East Campus, the majority of the students are required to use their cards, as there are multiple entries and it is difficult for a person working desk to see who is standing outside the Munroe entry.

Furthermore, as mentioned previously, more residents have been yanking open the doors due to increased awareness of their pullability. It is difficult to determine whether a person pulling the door is breaking it or must pull the door because it has failed to open properly, as the two situations are cyclical: a broken door leads to more pulling, while pulling breaks the door further.

The response to this situation from the Housing Office is unambiguous and inappropriate. Confronted with an unforeseen maintenance budget, Housing accuses EC residents of vandalism, threatening collective punishment (again, see Appendix ??). No evidence has been presented, no vandal caught, yet the entire dorm is to be charged for repairs. The residents of EC find this unfair and request that our concerns and addressed before the entire community is punished for the failure of inadequate doors.

3.3 Convenience

The third argument for the implementation of the card-only system is the convenience by which access to the dorm can be controlled. Cards, unlike keys, can be canceled at will, increasing security. The card holder's access can also be expanded without a physical transaction: an MIT ID number and the proper action on behalf of the Card Office is enough to unlock numerous doors.

Unfortunately, while these two feats may be theoretically feasible, it is our experience that cards are not being cancelled and activated in a timely fashion even though it is supposed to be an easy and quick process for the Housing Office. Many EC alumni claim that their cards still work at EC, though they have been gone up to two years! Conversely, more than a quarter of EC residents could not open the card-only doors when the first pair of doors ceased to be key-accessible. Cards belonging to freshmen as well as first-year graduate resident tutors (GRTs) would not unlock the doors because they had not be activated, despite reassurances from the House Manager that every current EC resident would have an activated card by the time the system was implemented. This problem persisted for several weeks until the lists could be updated.

3.4 Uniformity

The final motivation for the changeover to card-only access is to achieve uniformity of access throughout the residence system and the MIT campus. Statements to this end made by the Housing Office, however, are not consistent with the following facts:

1. Of the eleven MIT residence halls, only eight currently employ the card as their sole means of access. Not coincidentally, those eight have central front desks that can remove many of the barriers to effective card access. The remaining three—EC, Random Hall, and Bexley—have multiple entries and employ dual access, a system that better suits the physical nature of the dormitory.
2. As revealed in exchanges with the Card Office, MIT will soon be popularizing a third form of access—proximity cards. Two buildings (Simmons Hall is one) already have the necessary hardware installed. It appears that while the Housing Office is trying to achieve uniformity on one end of campus, it is unraveling it at the other.

4 Additional Student Concerns

While the Housing Office has been promoting the above as reasons for card-only access, EC residents have voiced several other concerns that should be addressed before implementing card-only access.

4.1 Privacy

Currently, the Card Office records both successful and unsuccessful attempts to enter a building using a magnetic card. According to information published in *The Tech* earlier this year, logs of this data are erased every three weeks, unless there is a compelling reason (i.e. a crime) to examine it further.

It has come to the attention of HouseComm, however, that the House Manager receives routine printouts of these logs every week. Residents cite concerns about the use and persistence of these records. Why does the House Manager need to know who enters and leaves the building on a day-to-day basis? In addition, what guarantees are there as to the security of those records and to their destruction after three weeks, in compliance with Card Office policy?

4.2 Lockouts

Although this concern has been brought up previously, there are significant subtleties that deserve consideration. Currently, a resident or guest that has misplaced his or her keys and wishes to enter the dormitory

has one of two possible recourses to action, depending on the time of day:

1. If the time is between the hours of 0800 and 0200, the resident can call the front desk worker from the Munroe entry telephone. The desk will let the resident inside and issue a temporary entry and room key. If, as Carl Seagren has stated, the front desk will be unable to issue temporary entry cards, there will be no access for disabled students seeking to enter First West and First East, the two handicap-accessible floors, as both are only reachable via stairs. This is a serious problem that has received no consideration from the Housing Office.

Likewise, any person locked out from an East Parallel room, would have to descend into the basement and take the tunnel to the other side. This is a serious problem because the tunnel is often flooded making passage a challenge for residents and guests (e.g. relatives staying at EC for commencement).

2. If it is between 0200 and 0800, a locked-out resident can call Unit 12 and request the aid of the Nightwatch. Depending on the circumstances this can result in a resident waiting outside without shelter for upwards of 30 minutes. Although this is not a direct result of switching to card-only access, this problem must be addressed. Card-only doors constitute a single-access system meaning that there needs to be but one point of failure to render the doors inoperable. Previously, if a resident lost a card, he or she could use a key and vice-versa. Thus, card-only access is likely to increase the number of lock-outs.

5 Proper Consideration and Redress

At the present moment, EC residents lack confidence that their concerns will be adequately addressed by the Housing Office. As a result of the original Statement of Concerns, the plan to convert EC to card-only access was divided into three staggered stages to allow for student input on the evolving system. Besides this superficiality, no further provisions for student comment were made, and the decision to implement card-only access was treated as a done deed, resultant breaches of security, costs, and inconveniences notwithstanding.

Nothing indicates that this situation will improve. On the contrary, a recent effort by an EC resident to reopen the dialog with the Housing Office through a petition was met with extreme prejudice.

6 Recommendations for the Future

Understandably, EC residents are frustrated with the current state of affairs and wishes to work with the Housing Office to amend the situation and repair the relationship between EC and the administration. Below

are our recommendations to the Housing Office to address our concerns. They encompass both the current card-access crisis as well as ideas for better ways of communicating with students in the future.

6.1 Short-term Recommendations

Given that the arguments in favor of card access are inconclusive, and that the plan carries with it unforeseen and unnecessary inconvenience and leads to animosity, it is the recommendation of EC HouseComm that the current plan to switch the outside entry doors to card access be delayed. The switch to card-only access currently lacks the holistic vision of a successful plan, and, while solving some problems, leads to a host of new ones. Instead of continuing with the implementation, the Housing Office should delay the switch until a significant number of our concerns can be addressed at once. Housing should perhaps wait until enough money is assembled to install card readers in all the entry doors (both outside and hall). Furthermore, investigation into installing more robust doors and/or card readers should occur. It is our understanding that the House Manager has already begun this process. Alternatively, another approach would be to wait to implement the card-only access system until a major overhaul of the dormitory is in the works.

We are not reflexively asking for the Housing Office to withdraw its plan to implant the card-only access system. The residents of EC are also concerned about safety, convenience and cost and we would like to work with the Housing Office to see that everyone's concerns are addressed. As mentioned in Section ??, there are numerous issues that have been ignored in the drive to switch EC to card-only access. Now would be a good time to go back and address those.

Furthermore, we believe that any future attempts at switching EC, or any other dorm, to card-only access should not be initiated without first consulting with students, patching up any extant security holes, performing an accurate cost analysis, and ensuring the trustworthiness of the system before putting it online. Even seemingly inconsequential issues such as lockout procedures must be taken into consideration. Regardless of what the final list of issues may be, it should arise as a result of earnest deliberation with the impacted students.

6.2 Long-term Recommendations

Much must be done to revive the trust lost as a result of the card-only access decision. More still must be done to ensure that conflicts such as this do not erupt in the future. We are hopeful that the administration will be excited and willing to work closely with EC residents on any and all matters that affect our daily lives as MIT dormitory residents. Further, we hope that the following values will guide our future efforts to constructively work with the administration:

1. Communication is of paramount importance. Students affected by a decision must be told of plans in a way commensurate with the scale of the affect. After the first notice is given, the Housing Office(or any other department), should be prepared to engage in frank talks with any concerned students or their representatives. Sufficient time between the announcement and a proposed action will ensure that all reasonable concerns can be heard and addressed, and that students are not fighting against the clock, as has happened as a result of several decisions this year.

Even if students have little power to affect a decision, hearing about it before any action takes place allows them to reflect and adjust accordingly, no longer idle subjects but participants.

2. Transparency goes hand-in-hand with communication. Whenever an announcement is made, a list of reasons should be formulated and care should be taken to present a clear and honest argument for a particular decision, along with its inherent choices and tradeoffs. What are the motivations behind the decision? Why has the decision been made at this time? Such considerations will not only make the decision seem well-intentioned, but a transparent decision-making process will lead to sounder decisions.

6.3 Conclusion