ABSTRACT: This paper presents an undergraduate design studio as a site for research. In discussing the validity of design research, Groat and Wang point out that Ellison and Eatman (2008) define public scholarship as a form of socially engaged research (2013:51). This paper posits that design is often a form of exploratory research or hypothesis-seeking. Although this project is socially engaged, considering design research as exploratory opens the door to a broader group of projects. Business researcher Dudovskiy defines exploratory research as investigations that explore the nature of a question without requiring conclusive results. He points out that “the researcher ought to be willing to change his/her direction as a result of revelation of new data and new insights.” (2018). Here we argue that when an architectural design studio involves research to analyze and develop evidence (including literature searches, site visits, input by experts and engagement of community members), as well as rigorous investigation of design hypotheses (evaluation of alternative designs, documentation of architectural characteristics, generation of evaluation criteria, and rigorous assessment of options), the design studio becomes a site of research scholarship that informs design. The design studio presented here originally focused on reconceiving youth rehabilitation, but was reframed as preventing youth incarceration. The diverse final project proposals explore the general hypothesis that providing appropriate youth and family services in the community may contribute to the prevention of juvenile incarceration.

KEYWORDS: Pedagogy, Studio, Youth, Incarceration, Studio-Based Research

1.0. THE EXPLORATORY RESEARCH

As a part of the 5th studio undergraduate experience, the studio was organized to take an exploratory approach to the study of youth detention facilities. Recently at the University of Minnesota School of Architecture, the curriculum at this studio level has been structured to bring architectural firm practitioners as studio instructors and critics to design and develop a building as a professional project including design details. The youth rehabilitation studio was structured somewhat differently, in that the author, a faculty member, working with Angela Cousins, a Hennepin County Department of Corrections and Rehabilitation professional, brought the research project into the studio, inviting BWBR, a local firm with expertise on incarceration and therapeutic settings to co-teach and participate as experts. Several firm members cooperated on developing the syllabus, architect, Dan Treinen, the firm design leader joined the studio as instructor for approximately one class per week, and firm members participated in presentation/discussions with students as well as on developmental and final project reviews during the semester.

Hennepin County had launched a project to redesign residential services for ‘Department of Community Corrections and Rehabilitation (DOCCR) – involved youth to create a continuum of services for DOCCR-involved youth who are in, or at imminent risk of out-of-home placement to address their complex behavioral or mental health needs.’ Having previously proposed a regional joint facility with neighboring Ramsey County that was rejected by community members as being too institutional, too large, and also too far from families (suburban), the county was interested to find a different way to develop the continuum of services. The collaboration with the university sought innovative design approaches to rehabilitative, de-institutionalized, inner city treatment for youth, rather than the current punitive, non-urban orientation.
Working with the county, the community, university experts and architects, the original idea was to explore how attitudes such as education, normalization, rehabilitation and healing are expressed in architecture. As with most design projects, exactly what this meant was to be discovered.

2.0. RESEARCH APPROACH
The previous semester in a seven-week graduate design module, the instructor and author had focused on the design of settings for adult incarceration, using sketch models, and a programming approach that included the rigorous development of assumptions, hypothesis and design directives (Robinson and Weeks, 1984) at each phase of design, as well as citation of research that supported decision-making. This time the same approach was taken, but the project examined the issues related to youth instead of adult, incarceration. In both studios, because in Minnesota there are no private prisons, we did not address the question of public versus private funded institution.

Information gathering included class reading of literature on incarceration broadly (Alexander, 2012; Davis, 2003), literature on existing traditional and innovative approaches to incarceration and non-punitive, therapeutic settings (e.g. Benko, 2013; Ferro, 2014; Krueger and Macallister, 2015; Foster, 2017; Slater, 2017; Slade 2018); on youth psychology (e.g. Requarth, 2017) and literature on architecture reflecting attitudes (Canter and Canter, 1979; Foucault, 1979; Robinson, 2006; Hertzberger, 2008; Alt Architecture & Planning, 2016). The readings were debated and analyzed in a series of discussions in the context of site visits and discussions with experts and community members.

After the initial exercise on preconceptions, the students completed a precedent analysis. Teams of three students analyzed four precedents each, a traditional prison, an innovative prison, and two non-incarceration settings (e.g. addiction treatment, student housing, hotel, monastery/ convent). Some of these settings were designed for youth and some for adults. Students were asked to identify the assumptions and attitudes that the places communicated and to detail what aspects of the design communicated these (design directives). This exercise was intended to help students appreciate the wide range of architectural expression that might be employed in design.

During the initial weeks of the semester, students visited three different settings, a juvenile detention center, a traditional prison now serving short-term prisoners with sentences less than one-year, some of whom were working in the community, and a high-end youth addiction treatment center. Also during the semester, but mostly at the beginning, students had the opportunity to learn from various experts on topics such as Treatment Goals for Youth Offenders, Changing Landscape of Juvenile Detention, Trends in Juvenile Mental Health/Juvenile Versus Adult Responses, Discussion of Challenges of Youthful Offenders with Parents, The Spectrum of Care for Youth, Design for Youth Mental Health Treatment, Alternatives to Juvenile Detention, an Staff Perspective on Design for Troubled Youth. Although these events generally began with the experts in design, child psychology and juvenile treatment, and parents presenting information, they ended up with student questions and discussion. Additionally, experts, including parents/ community members sat on the reviews of student work, providing important information and feedback.

After the precedent analysis exercise, students participated in a ritual-place exercise that involved the use of sketch models to study how one type of place could express different attitudes depending upon its design. Each student studied a variety of social places and activities (eating, relaxing, entering, etc.) and how each place could be designed differently to represent two of the attitudes. Subsequently, students identified a program that addressed the spectrum of services, and using analogies, as well as assumptions, hypotheses and design directives, developed two possible building arrangements in the form of sketch models. Students then chose two sites in a specific neighborhood, analyzed each one, and located the
two programmatic arrangements on each site, evaluating the four alternative schemes to choose a scheme and site for development.

3.0. RESEARCH FINDINGS

Security. The precedent analysis, site visits to the incarceration settings, and statements by the expert on adult incarceration facilities, showed that a driving factor in the design of such settings is the perceived need for extreme security. Discussions with the prison staff and readings from literature also revealed that while high security was considered important for the entire facility, actually a very small percentage of people at any of the settings was sufficiently dangerous to require such high security. Furthermore, we hypothesized that the stigma of incarceration, which affects the reception of incarcerated people in the community, was due in large part to the assumption that all incarcerated people were so highly dangerous to society that they required such security. The class concluded that rather than design incarceration facilities around security, any very dangerous residents could be treated independently, and in general, but especially for youth, such facilities should simply be seen as housing. In Germany, for instance, youth under age 18 are rarely incarcerated, and what the Europeans call “emerging adults” aged 18-24, are placed in normalized settings with almost no security (Schiraldi, 2018; Pruin and Dünkel, 2015). This is based on the understanding of human development recently found by neurological researchers indicating that emotional maturity and self-control are typically delayed in males until the mid to late twenties (Requarth 2016). Legal scholars have concluded that we need to reconsider what we see as the age of legal maturity.

_Hypothesis:_ Since creating hyper-secure incarceration facilities stigmatizes people who are incarcerated, and prevents them from living in normal housing, the level of security should not exceed that necessary to protect society Thus high-level security facilities should be reserved for extremely dangerous people. To provide humane treatment and a setting that promotes rehabilitation, people who have been found guilty of crimes and are not dangerous should be housed in what Nirje (researcher on normalization for adults with developmental disabilities) described as “providing the conditions of everyday life which are as close as possible to the norms and patterns of society’s mainstream” (1969: 181). As the Europeans are coming to see, removal from one’s own home is sufficient punishment, and a non-punitive form of housing contributes to rehabilitation (Benko, 2015).

_Hypothesis:_ It is counter-productive to incarcerate young adults. They should be considered to be troubled youth, and their problems should be addressed with specialized treatment. _Unless they are a danger to others, youth should remain in their communities to be treated and rehabilitated, which will eliminate transition problems, and reduce recidivism._

Mental Illness and Addiction. Based on research that students did independently in this class and in the previous studio, on mental health and youth incarceration using the National Alliance on Mental Illness (NAMI) website (supported by research from the Department of Justice website, e.g.), and also on information received from the child psychologist, from parents and from visits to the youth centers, we discovered that incarcerated youth are very likely to have been traumatized themselves (e.g. Olafson et al, 2016), and are more likely than other youth to have mental illness (e.g. Shufelt and Cocozza, 2006). Additionally, we learned from parents that there is inadequate full-time mental health treatment for youth in the State of Minnesota, resulting in young people being sent far out of state to places such as Michigan and Texas. Furthermore, research indicates that “Involvement with drugs or alcohol increases the likelihood of continued and serious contact with the juvenile justice system” (Young et al, 2007). We concluded not only that residences for youth needed to reflect an attitude of healing, but also that mental health and addiction treatment facilities for adolescents needed to be provided in the local community.

_Hypothesis:_ Many youths are incarcerated because of mental illness and/or drug addiction. Instead they should receive treatment for their problems. _Because of proximity to family, and advantages in transitioning after treatment, young people with mental illness or addiction who are adjudicated, should not be incarcerated, but should be treated for their illness in their community._
communities. Sufficient mental health and addiction facilities should be provided for adolescents in their local communities.

Hypothesis: Because troubled youth are subject to trauma themselves, punitive designs augment their problems. The facilities that served troubled youth should be designed to be therapeutic and healing.

Homelessness. Another problem faced by many youths in Hennepin County is homelessness and lack of a family. Other young people may choose to live apart from a difficult family, or may have been rejected by their family for a variety of reasons including addiction, problem behavior, mental health, and/or gender identity. Adolescents who are homeless are vulnerable to involvement with the justice system. While residential facilities exist for this group in the county, they are insufficient to meet the need. Sufficient facilities to meet their needs will help them avoid getting into trouble.

Hypothesis: Creating community-based housing for young people who are homeless that includes counseling and treatment will help them avoid becoming involved with the justice system, and help them develop into productive adults.

Location and Family Support. The visits to the adolescent detention facility and information from experts revealed why the community had been unhappy with the county’s proposal for a new treatment facility to be located in the existing suburban location. First of all, the facility was far from the places where the youth’s family lived, and there was no public transportation available. The county supported transportation at certain times during the week, but not necessarily at the convenience of parents. Also, the distance meant that parents had to find a large block of time for the visit, which was an economic disadvantage to people already in a difficult economic situation. Second, although the available education was able to be tailored to the needs of the particular youth in the facility, which often contributed to academic success for the first time, the time able to be devoted to this was about three hours of education. Additionally, the lack of facilities affordable to such a small population of young people (30 typically in 2018) meant that the program was very limited compared to a typical high school. Third, the treatment, including individual and family counseling, was typically successful in improving the situation, but once the term of stay was complete, it was impossible to maintain the type of advice and counseling that had been so helpful, because of the distance from the community and the lack of transportation, so the transition back to the home environment was fractured.

Another important set of findings came from the parents’ description of their experiences. The two parents who spoke to us represented Native American and African American experiences. Both were women who had had a child in the youth detention system. Both had been single mothers raising several children, working two jobs to support their families, who could only afford housing in neighborhoods with significant problems with crime and drugs, who couldn’t afford child care, and whose relatives were looking after their children, not always with ideal supervision, especially of adolescents. The problems they faced were due to poverty, lack of child care, and in general lack of family support in their neighborhoods. When our students studied the neighborhoods where most youth in the county detention facility came from, they discovered that after-school activities were strong for elementary school children, but weaker for middle-school youth, and activities appropriate for high school youth, with the exception of sports, were almost non-existent.

We also learned from the child psychiatrist that what made youth vulnerable to gangs was the need for acceptance. Children traumatized by their family situations, children bullied because of such things as learning disabilities are susceptible to the what often appears to them to be the security of being in a gang. This elevated the need to help families with their child-rearing practices, and to identify children with disabilities at a young age, so they could be helped before they would begin to struggle in school. This suggested that provision of child care and
family support was an essential part of preventing youth from becoming troubled. The youth too, some of whom are parents, would benefit from the provision of child care and parental support.

**Hypothesis.** If troubled young people need 24-hour a day treatment, that should be provided in the community where they live, to facilitate transition to community life after care.

**Hypothesis.** Provision of child care is an essential ingredient to support working parents as well as youth with children. Child care should be made available to all, along with parental education about best child-rearing practices.

**Hypothesis.** Child care and family support need to be designed to identify disabilities early in a child’s life so that treatment, and family education can prevent later problems in school and adult life.

**Hypothesis.** By providing facilities in local communities for young people and families that assist with activities such as parenting, child care, family counseling and support, job training, literacy training, college preparation, mentoring, and after-school activities designed for older youth (including athletic recreation, expressive arts, digital and other skills development, and tutoring), families will be more able to address the needs of their youth members, and the young people will be less likely to get in trouble.

Institutionalized Racism. Perhaps the most significant finding came from our comparison of visits to the county detention facility and the high-end adolescent addiction treatment center we visited. At one time the county treatment center, built in the 1960’s with some more recent renovations, held a hundred or more young people, but in fall of 2018, there were approximately 25 youth. The Addiction Treatment Center, in contrast held about 100 young people in a facility that was built in 2016 to the highest therapeutic rehabilitation standards. One difference between the two places was that costs of the young people housed in the county facility were borne by the county, while those in the private center were covered by private insurance.

But more significantly, at the time of our visit, all the youth in the county facility were African-American, and in the private center, the youth were almost entirely Caucasian. Despite having read *The New Jim Crow*, we were very shocked. There was no avoiding the conclusion that we as a society were defining troubled youth as either “criminal” or “having problems,” depending upon their race and economic status. The difference in attitude at the two facilities can be best seen in the way that “time out” spaces were designed. At the county facility, “misbehaving” kids were sent to the crisis intervention unit, an area under 24-hour surveillance, with a sally port and secure metal doors. Here the windowless rooms were designed very much like prison cells with exposed concrete block walls some of which were covered with padding on all surfaces. At the addiction facility there were no equivalent spaces, although entering youth experiencing addiction withdrawal were housed in the health facility under similar surveillance, but in typical dormitory-style rooms with windows, sheetrock walls, and carpeting on the floor. When in crisis, the African-American youth were placed in a punitive environment like criminals, while the Caucasian kids were treated as health patients needing care.

**Hypothesis:** Instead of calling youth who are in trouble “criminals,” we should call them “troubled,” and treat them for their symptoms, whether as mental illness, drug addiction, problem behavior or other challenges, which will prevent them from getting into trouble with the law in the future.

**Hypothesis:** The environments that serve adolescents should not be criminalized. By giving youth with the tools to treat their symptoms, whether mental health, addiction, anger management, and providing these tools in settings that are non-punitive and non-institutional, youth will be less likely to get in trouble with the law. More appropriate attitudes are: healing, therapeutic, educational and normalized.
Spectrum of Care. At a mid-point in the semester, it became obvious that the problem we were considering went beyond the design of housing. When considering the “spectrum of care” as a housing problem, we assumed was that the spectrum to be addressed was how to design youth facilities for incarceration, mental health treatment and addiction. But when determining a design program to address youth rehabilitation, we realized that we needed to address the whole family situation, not just the youth. We came to see the spectrum of care as needing to serve each child, family member, and family as a whole. We held a meeting to figure this out, identifying out the needs of the child and the parent at each phase of a child’s life, asking “What do children, parents and family members need at each phase?” Devising a matrix on the white board, with the developmental stage at the top (infancy, preschool, elementary school, middle school, high school, young adult), for the rows we developed four factors to consider: 1. the child, 2. the parents, 3. the challenges and 4. the programs or institutions that could help. The students based their proposals on this spectrum of care in a variety of architectural and service programs, some of which incorporated housing, and others of which served families more broadly.

Hypothesis: Providing a spectrum of care that addresses the needs of infants, children, youth, adults and families as addressed above, especially in areas of the city facing poverty and crime, will significantly reduce youth involvement with the justice system.

Hypothesis: Developing a justice system that does not incarcerate troubled youth, but discovers and develops appropriate treatment will reduce the number of youths who are involved with the system as youths and adults.

4.0. APPROACH TO THE DESIGN
The students saw the importance of their designs being neighborhood specific. As mentioned earlier, we had information on where in the city the juvenile facility residents’ families lived. Within these two primary areas of the city, each student or student team selected a small neighborhood to serve, typically about ten blocks square- a subset of what is defined as a neighborhood by the city. The students studied these smaller areas in the context of the surrounding areas, discovering which services already existed in the area, so they would complement rather than duplicate what was there.

As described earlier, they placed their alternative program arrangements on two possible sites selected from their chosen area, and evaluated the four possible options, selecting one site and one program approach, often adjusted for new insights gained from the analysis. At this point some students chose to pursue their project individually, and others chose to do so in teams of two.

5.0. STUDENT PROPOSALS
Of the eight student proposals, three included housing, the group home proposal, the mental health proposal and the vocational training proposal. The others proposed community service buildings, a teen center, two athletics-based community centers, and an after-school activities center linking two existing service providers.

Group Home & Treatment Center Proposal. This project addressed the problems caused by the distance of the existing juvenile treatment center from the communities it served. The approach distinguished between housing and treatment, housing being either a group home or a family residence, and the treatment center, which could serve youth in the incarceration system, youths who had served their terms and lived at home, or other youths in need of assistance. Treatment includes after-school activities (physical recreation, academic assistance, creative activities), and rehabilitative support (individual therapy, family therapy, etc.). The key idea is that throughout their sentence, release, and transition consistent, stable treatment can be provided, as well as the ability to attend a local high school, so that the living pattern of housing-school-treatment-housing can be maintained whether a young person was living in a group home, a family residence, or possibly, independently.
The group homes were conceived of as treating people with particular problems such as chemical dependency, mental health, homelessness, or problem behavior. Each design would be unique, fitting the need of the youth program, regulation requirements, and the adjacent neighborhood context. For example, a building could be a newly built apartment-style building for twenty-four homeless youth located in an area of single family and multi-family units, or a renovated house for a group of eight youth challenged by addiction in an area exclusively of single-family dwellings. The Treatment Center is centrally located next to an alternative school, and is easily accessible to two other high schools. Residents would be bussed between housing, school and treatment.

[Figure 1. Community-Based Adolescent Care, Undergraduate Student Project by Luke Walsh, University of Minnesota Fall, 2018.]

**Mental Health Treatment Facility.** Located at the edge of one of the neighborhoods, and designed to be welcoming, the facility is adjacent to the river and parkland. It designed to serve, short-term, long-term and drop-in youth, providing a needed service for the city and the neighborhood.

**Community Centers.** The projects that developed community centers were primarily focused on the needs of youth. In one case, the project was designed to provide after school activities and athletics for older children and youth, with each having their own spaces, as well as space for service providers (food assistance and counseling). In the second example, the building, intentionally located between two existing service providers (a YMCA and a Health Care Provider), offered post-treatment, prevention and integration, in the form of hang-out space, mentoring activities, and counseling, filling the vacuum of support not offered by the adjacent projects. The third project was designed to attract youth as a hang-out spot. Having observed that the neighborhood after-school options were limited to activities that would interest elementary school kids, this center provided social space.

The fourth community center project, “Prevention at Farview,” designed by a team of two, addressed especially male youth in context of the entire spectrum of care. Based on the comments by park staff that the kids who came regularly to the center stayed out of trouble, the idea was to make it a place where kids would want to come. The proposed building was designed to replace a very busy, but outdated neighborhood gym and community center. Discussions with community members showed that the site was highly used by one ethnic group, but not at all by others. The goal was, therefore, to make sure that the new facility would be designed to welcome all. Designed as a neighborhood beacon, the design includes a large amount of glass, with a long-activated corridor that leads to the well-lit, and visibly prominent, upstairs gymnasium.
To serve two objectives, recreation and focus, the athletic facilities are primary, with the park site including many different types of game fields. But under the category of focus the building also provides space for child care, individual and family therapy, college prep, tutoring, and mentoring as well as literacy and job training. At the top of the hill the center straddles, is a café that overlooks the playing fields with cool drinks in summer and hot drinks in winter.

**Forest Child Care**. The final project is a child care center for disabled and normally abled children between the ages of three and five. It is designed to provide high quality care for kids, while specializing in identifying disabilities, providing therapy through nature-based learning and play, and training parents to deal with their children. The student provided statistics on the on the importance of child care in relation to juvenile success from research in Chicago that demonstrated 40% reduction in special education placement, 29% higher high school graduation rate, 33% reduction in juvenile arrests, 41% reduction in violent arrests, (Newman et al, 2000). Additionally, the student presented information on the success of outdoor or forest education of very young children in Finland and Denmark (Bentsen, 2013; Walker 2016) as the basis for his proposed forest school, located in the larger neighborhood in parkland along the Mississippi River. Having also learned from the adolescent psychiatrist that learning
disabilities were highly associated with crime and belonging to gangs, this project that allowed identification, and early treatment of disabilities seemed very appropriate.

6.0. IMPLICATIONS FOR USING THE DESIGN STUDIO AS A SITE FOR RESEARCH

Animatory research studies are intended to explore an issue without knowing what will be discovered. As mentioned earlier, such research addresses questions that may not be well understood, requires being willing to change direction, and attempts to develop understanding without providing conclusive findings (Bukowski, 2018). This can also be called hypothesis development as opposed to hypothesis testing.

Design studios often take on issues that are not well-understood. Typically, studios develop designs with implied hypotheses, but most often this is done without a rigorous research approach, and without explicitly stating the hypothesis that is implicit in the design. This studio engaged a rigorous research process, a process of identifying assumptions, identifying key research sources, including expert participants, identifying hypotheses and developing designs that consciously address the research findings.

There is an advantage to work with co-instructors that bring expertise to a project. There is also an advantage to working with a group of students who bring a fresh look at issues, and a willingness to find information. Having so many perspectives focus on a project is highly valuable to exploratory research. Finally, working with advanced architecture students brings an ability to see the design implications of findings. It can be a challenge, however, to get all the students on board with the rigorous methods required. This group of students were excited and willing to take the necessary steps to do valid research.

In terms of the research findings (security, mental illness, homelessness, location, family support, institutionalized racism, spectrum of care), we addressed some of them directly, and others more indirectly. The most difficult finding to address was that of institutionalized racism. We did our best to not describe or treat the youth as offenders, and to treat all of the people in our building designs with dignity, creating places that well-designed and non-stigmatized. By focusing on the neighborhoods where the youth in the justice system come from, we have discovered neighborhoods where it is difficult to raise children, and the problem of locating facilities near the families that need them. The student projects provide a variety of ways to address the spectrum of care, including family support and treatment of mental illness, and chemical addiction. Further we found ways to design both residences and community facilities that do not require a stigmatizing level of security. Although we have identified ways to help families improve their situation, we are unable to address the underlying reasons these neighborhoods are sites for troubled youth, factors such as poverty which causes problems with drugs and gangs. As designers we cannot eliminate these factors, but through good program development, thoughtful proposals and strategic dissemination of our findings that lead to improved services in their neighborhoods, we may be able to help people to overcome such problems. In the next phase of this research, the studio will be working with a neighborhood group to address these needs more directly.

In sum the studio effectively developed and analyzed research in a way that allowed a reframing of the juvenile rehabilitation project from fixing a problem to considering how to prevent the problem. Students were successful in using the research to develop innovative designs that could prevent youth from getting into trouble by aiding their families and helping the young people and their families to develop better futures.

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PRACTICUM-FOCUSED PEDAGOGY

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ENDNOTES

i The students who participated in this research studio are Jared Eichberger, Tyler Gaeth, Nicholas Hess, Joshual Meiners, Andrew Mercier, Kelly Mork, Austin Rudin, Hana Saifullah, Adam Schellberg, Luke Walsh, and Belinda Xiong.