Bonn's Max Planck Institute: A New Building and a New Era

Allyn Jackson

Since its founding in 1982, the Max Planck Institute for Mathematics (MPI) in Bonn has become a major international center for mathematics research. With the money and effort that have poured into eastern Germany since the fall of Communism, mathematical enterprises are blooming in places like Leipzig and Berlin, the latter of which is the site of the International Congress of Mathematicians (ICM) in August of this year (the first time since 1904 that the ICM will be in Germany). Nevertheless, the MPI in Bonn retains its role as the top research institute for pure mathematics in Germany. Much of the credit for the success of the MPI goes to its founding director, Friedrich Hirzebruch, who has made enormous contributions to rebuilding mathematics research in Germany after World War II. With Hirzebruch's retirement from the directorship in 1995 and the Institute's imminent move to fine new quarters smack in the center of Bonn's old town, the MPI seems poised to enter a new era.

Roots of the MPI

Although Germany has historically produced some of the best and most prolific mathematicians, many of its top researchers fled the country during the Nazi period. German mathematics never quite recovered from the loss. The slow process of rebuilding the field has been aided in no small part by Hirzebruch, who is in many respects the most important German mathematician of the postwar era. He brought to German mathematics just what it needed after the war: scientific leadership of the highest quality combined with the administrative skill needed to rebuild the field's infrastructure. He is well known not only for his mathematics—which includes the proof of the Hirzebruch-Riemann-Roch theorem and many other important contributions to topology and algebraic geometry—but also for acting as something of an ambassador for German mathematics. For example, he has worked on behalf of the Minerva Foundation, a German organization that has established a number of small scientific research institutes in Israel. Last year he received the Lomonosov Medal, the highest honor of the Russian Academy of Sciences, partly for his research achievements and partly for his work on building greater cooperation among scientists in Germany and Russia. This year he is serving as Honorary President of the Organizing Committee of the ICM.

After receiving his Ph.D. from Münster in 1950 Hirzebruch spent time at the Institute for Advanced Study (IAS) in Princeton and was for a year on the faculty of Princeton University. When he was offered a professorship at the University of Bonn in 1956, he wanted to continue the international contacts that he had developed while abroad. Thus the now-famous *Arbeitstagung* was born in 1957. The word literally means "working meeting". The hallmark of the *Arbeitstagung* was that speakers were not arranged in advance, even when the meeting grew to as many as 200 participants and lasted a week. The method of choosing the speakers became known as "guided democracy": participants gathered together for a "program discussion" in which they threw out suggestions for whom they would like to hear speak, and Hirzebruch acted as master of ceremonies, writing names on the blackboard and gauging the level of interest in the various suggestions. The one exception to this spur-of-the-moment scheduling was that the opening talk was always set in advance. For many years running, Michael Atiyah presented the first talk of the *Arbeitstagung*. Later on, this task was taken up by his student, Simon Donaldson, and others.

Selecting the speakers took mathematical taste as well as diplomacy, and Hirzebruch's choices were not always popular. "People claimed that if I didn't like a particular suggestion, then my ears got worse and I didn't hear it," he recalls. Nevertheless,

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there was always a sense of excitement and anticipation at the *Arbeitstagung* that could not be matched by a planned-ahead meeting. Other places have emulated the model of the *Arbeitstagung*, but it seems it was invented by Hirzebruch. He is modest about the innovation, saying that he did it in part "to save some energy, not to worry about negotiating before the meeting with many people what they will talk about." And, he confesses, "There is also some laziness involved."

MPI's Precursor: SFB Theoretische Mathematik

In addition to starting the *Arbeitstagung*, Hirzebruch wanted to set up a way of insuring a steady flow of international contacts year-round. His time at the IAS, as well as the establishment in 1958 of the Institut des Hautes Études Scientifiques (IHES) outside Paris, became the inspiration for the idea of establishing a permanent mathematics institute in Germany. Soon after Hirzebruch came to Bonn, German mathematicians began discussing this idea in connection with attempts to secure permanent funding for the mathematics research institute at Oberwolfach. Located in the seclusion of Germany's Black Forest, Oberwolfach was founded in 1944 as a refuge for a small group of mathematicians and later became a mathematical conference center. The discussions about Oberwolfach mingled with the idea of establishing a new institute along the lines of IHES or IAS, with Hirzebruch as director. Around 1960 a formal application for funding was made to the Max-Planck-Gesellschaft (MPG, Max Planck Society), a private foundation that funds scientific research. The federal and all of the state governments provide nearly all of the funding for the MPG, but it operates independently of the government. Currently the MPG funds about eighty Max Planck Institutes all over Germany in all areas of science.

This first proposal for a Max Planck Institute in mathematics foundered for three main reasons. First, the application discussed both a new institute as well as Oberwolfach, thereby creating some confusion over the differences and priorities between the two. Second, the reviews of the application were mixed. One of the most negative was from Carl Ludwig Siegel, who not only was unenthusiastic about the institute model—he spent some time at the IAS himself after fleeing Nazi Germany—but also disliked the abstract direction that many mathematicians were taking, Hirzebruch being a prime example.[1] Finally, as with many programs for funding science, mathematics did not fit the mold. Generally, Max Planck Institutes are centered around a particular individual and his or her research, a system that is well suited to laboratory sciences but does not work so easily for mathematics.[2]

Photograph courtesy of the Max Planck Institute, Bonn.

Friedrich Hirzebruch

Soon after this application was rejected, the Deutsche Forschungsgemeinschaft (DFG, the German equivalent of the National Science Foundation in the U.S.), started providing funding to universities for research programs called *Sonderforschungsbereiche* (SFB, special research areas). Mathematicians in Bonn applied to the DFG and in 1969 formed the SFB Theoretische Mathematik under the leadership of Hirzebruch. (The following year Bonn got a second SFB in the area of approximation theory and optimization, led by Walter Vogel). With the SFB, Hirzebruch was able to bring a higher international profile to the Bonn mathematics department by bringing in each year about forty visitors from abroad for long-term stays of a year or two. The university covered the "overhead", from offices to supplies to secretarial assistance, while the SFB paid salaries for the visitors.

In addition to the improvement provided by the SFB, the Bonn mathematics department expanded from three full professors to six, hiring such well-known people as Jacques Tits, Wilhelm Klingenberg, Günter Harder, and Egbert Brieskorn. Also attracted to Bonn in 1970 was Don B. Zagier, a brilliant graduate student then just nineteen years old. He had spent two years at Oxford studying under Atiyah. When Atiyah went on leave and it was unclear whether he would return, Zagier looked around for a place to finish his dissertation

[1] *Part of Siegel's letter appears in the article "Mordell's Review, Siegel's Letter to Mordell, Diophantine Geometry, and 20th Century Mathematics", by Serge Lang,* Notices, *March 1995, pages 339–350; see in particular footnote 8 on page 347.*

[2] *For an excellent account of this story, see "Max-Planck-Institut für Mathematik: Historical Notes on the New Research Institute at Bonn", by Norbert Schappacher,* The Mathematical Intelligencer, *vol. 7, no. 2, 1985.*

Photograph by Ingrid von Kruse, Freibildnerische Photographie.

Don B. Zagier

and ended up with Hirzebruch in Bonn. It was not an obvious choice: "From the war until about 1970 you could count on your fingers the number of top leaders in mathematics in Germany," Zagier notes. As he explains, "I came to Germany uniquely because of Hirzebruch's personality." Not only was Hirzebruch a warm and welcoming presence, it was "just so exciting mathematically" to work with him. Zagier has now been in Bonn for about twenty-five years, having turned down offers to go elsewhere (for some years he retained joint appointments in Bonn and at the University of Maryland, and now he has a part-time appointment in Utrecht).

SFB Phased Out, MPI Phased In

The SFB was from the outset temporary: DFG rules stipulated reapplications every three years and closure after a maximum of fifteen years. So by the late 1970s there were renewed discussions between mathematicians in Bonn and the Max Planck Society about establishing a permanent Max Planck Institute in mathematics when the SFB ran out. The problems and confusion that had arisen in the first application were not present this time, and the MPG was very receptive to the idea. By 1980 it had been decided in principle to found such an institute in Bonn with Hirzebruch as director. The usual model of building a Max Planck Institute around the work of an individual was set aside; instead, the role of the director was to attract high-quality mathematicians working in all areas. The success of the SFB was proof that this mode of operation worked, and the establishment of the MPI was more a matter of making the SFB permanent and independent from the university than of creating an institute from scratch. The plan was that the MPI would begin partially operating in 1982 during the phase-out of the SFB, which was scheduled to end in 1985.

In January 1982 the MPI moved into its present quarters on Gottfried-Claren-Strasse in Beuel, a section of Bonn across the river from the old city. Zagier and Harder were appointed as scientific members of the MPI, though in somewhat different roles, with Zagier keeping only loose ties to the University of Bonn and Harder retaining his full-time professorship there. Hirzebruch retired from the directorship of the MPI in late 1995, though he still retains the title of retired scientific member and is still based at the Institute. In 1993, Gerd Faltings, then at Princeton University, accepted a position as permanent scientific member of the MPI. Also hired in the same capacity that year was Yuri Manin, who in 1991 had left positions at the Steklov Institute and Moscow State University. Faltings, Harder, Manin, and Zagier run the MPI jointly, with the position of "managing director" rotating among the four every two years.

The MPI bears more similarity to IHES or IAS than to the Mathematical Sciences Research Institute (MSRI) in Berkeley, the Institute for Mathematics and its Applications (IMA) in Minneapolis, or the Isaac Newton Institute in Cambridge, England. MSRI, IMA, and the Newton Institute run programs that focus on specific mathematical areas, and mathematicians interested in those areas apply to participate. These programs typically run from a few months to a year and are fixed about two years ahead of time. By contrast the MPI does not run programs; it takes applications from mathematicians in all areas and chooses whom to invite according to the quality of the applicants. Efforts are made to coordinate invitations so that there are people in the same or related areas who can interact. If there are a number of applications in a certain area, the MPI might organize a special concentration of people all working in the same area and perhaps suggest to some in that area who have not applied that they do so. Sometimes these activities can grow to be quite large; for example, during a two-and-a-half-month period last year about forty topologists came to the MPI for stays of varying lengths. This activity culminated in a small conference of forty to fifty people.

At any one time the MPI has about eighty visitors. Of these about half are young mathematicians, ranging from fresh Ph.D.s to those who are five to eight years past the Ph.D. From the beginning the MPI has favored longer stays (usually a one-year sabbatical) over shorter ones in order to foster deeper interactions among the visitors. Occasionally there are special three-year visiting positions, usually for senior mathematicians. Sometimes a

mini-research group springs up around a three-year visitor, with the visitor making suggestions of people to invite for stays at the MPI. In recent years, with the difficult job market for mathematicians in many countries, the number of applications to the MPI has leaped to around twice what it was in the early 1990s. As a result the MPI has brought in more people for shorter stays, usually three to six months. Because of limitations on the number of visitors the building can accommodate, there has not been an increase in the number of people in the Institute at any one time, but there has been an increase in the number coming through the Institute per year, up from perhaps 200 to about 270 over the past several years.

Since the MPI began it has overseen the organization of the *Arbeitstagung*, but the lack of a sufficiently large lecture room at the MPI building has meant that all of the lectures are held at the University of Bonn. At the thirtieth *Arbeitstagung* in 1991 Hirzebruch announced that that would be his last time organizing the meeting. Since then the four permanent members of the MPI have organized the *Arbeitstagung* of the Second Series. It is held in odd-numbered years and has taken place three times so far, with the next one scheduled for the spring of 1999. With the growth in the size of the meeting and perhaps in the absence of Hirzebruch's inimitable skill in organizing it, there have been some changes in the Second Series, the most notable being that a few of the talks can be set in advance. Still, it remains an exciting event: the 1997 *Arbeitstagung* featured talks by a number of outstanding young mathematicians, including Vladimir Voevodsky, who will present a Plenary Lecture at the ICM in August.

Life at the MPI

One of the most important roles of the MPI is to provide mathematicians with time to do research away from the distraction of their usual duties at their home institutions. But the MPI also has a broader function, that of disseminating new ideas. Within the first couple of years of its existence the MPI organized a seminar on Gerd Faltings's then-recent work on the Mordell Conjecture while Faltings was a visitor there. Later on in the 1980s it held a seminar on the new theory about four-manifolds that had been developed by Simon Donaldson. Such activities have helped to expose mathematicians from all over the world to important developments in their subject. In this way the MPI benefits mathematical life in institutions all over the world, as its visitors carry away new ideas to work on back home. It also plays a special role in Germany, for many young mathematicians from German universities get their first taste of international-level research through a postdoc at the MPI.

Over the years the MPI has been the site where much important research in mathematics has been carried out. Some recent examples include research by Maxim Kontsevich on a conjecture of Witten about intersection numbers of moduli spaces of curves, and the work of Vladimir Voevodsky on a conjecture of Milnor in algebraic K-theory. Kenneth Ribet worked on his celebrated result that the Taniyama-Shimura conjecture implies Fermat's Last Theorem while at the MPI in 1986 and spoke about his ideas at the *Arbeitstagung*. In fact, it was an episode involving Fermat that drew perhaps the greatest public attention to the MPI. In 1988 the algebraic geometer Yoichi Miyaoka announced at the MPI that he believed he could extend to arithmetic surfaces the Miyaoka-Yau inequality that had been proven for complex surfaces years before. A. N. Parshin had suggested that such an extension would prove Fermat. Word of a purported proof leaked out to the press, and Zagier recalls that for five days he managed to keep a lid on the story in the hope that the details of the proof could be checked. But when the story finally was reported in the *Los Angeles Times*, other publications followed suit, and for two weeks Zagier found himself on the phone every half hour with newspapers all over the world. Within two weeks Faltings, who was still at Princeton at the time, found a problem in the proof, and life at the MPI returned to normal.

While research at the MPI covers all fields of pure mathematics, there are some areas of special strength. Hirzebruch's activities in algebraic geometry always attracted many visitors, particularly mathematicians from Japan. Today this theme has found a natural continuation in Manin's activities in quantum cohomology, which have also attracted a lot of visitors, especially Russians. Manin runs a weekly seminar on topics at the interface of mathematics and theoretical physics. With Zagier and Harder as permanent members, number theory has always been strong at the MPI, and the hiring of Faltings increased this strength. One of their organized activities is a weekly number theory lunch and seminar. The traditional emphasis on topology begun by Hirzebruch has continued through the permanent position of homotopy theorist Hans Baues and through three-year appointments of topologists (two examples are Matthias Kreck of the University of Mainz and Ian Hambleton of McMaster University) as well as a weekly seminar. In fact Hirzebruch himself has organized an MPI activity on the topology of algebraic varieties, to be held this summer in memory of Boris Moishezon, who died in 1993 at the age of fifty-six. There is also the "Oberseminar", in which visitors speak about their work in a way that is accessible to all MPI visitors, even those who are not in the same area. The directors usually attend the Oberseminar and sometimes engage in banter and verbal

A famous statue of Beethoven overlooks the square in front of the facade of the new Max Planck Institute building in Bonn.

sparring that contributes a convivial, informal spirit.

For a mathematics institute, creating this kind of open and stimulating scientific atmosphere is paramount. But there are also other, more practical aspects in the running of an institute that can influence the quality of a visitor's experience. One of these is office space, which at the MPI is in short supply. Very few visitors get offices to themselves, many professors are 2 or 3 to an office, postdocs might be 4 or 5 to an office, and graduate students as many as 7. Some MPI visitors have perceived a sense of hierarchy in the way office space is distributed. The MPI administration says that hierarchy does not come into play and that they distribute office space according to such practical considerations as how many people are likely to come to a given visitor's office for discussions.

Another major consideration is funding for visitors. The MPI does not pay salaries to regular visitors but instead provides a certain amount per month that (usually generously) covers expenses. Postdocs are given an amount more like a full salary, on the expectation that they do not yet have permanent positions. Apart from postdocs, there are two categories of pay, one for assistant and associate professors, and one for full professors. The fact that there are variations in the amounts paid within each category has led some visitors to perceive here too a sense of hierarchy in the workings of the MPI. Although it produces some grumbles, this system of paying visitors can offer more flexibility than is found at other institutes. For example, because senior visitors at MSRI typically get only funds to cover living expenses, high profile mathematicians who have organized MSRI programs have sometimes not shown up to participate in the programs because the pay was so low.

In addition to office space and pay, the quality of the library is an important aspect of institute life. A common problem for institute libraries is that the holdings do not go back very far: The MPI's library began in 1982 and holds complete sets of all of the major mathematics journals from that time forward. Faltings has used research funds he received by winning the Leibniz Prize to fill in back issues of some journals. Thus the main difficulty the MPI library has faced is not lack of money but lack of space; for want of any other option, it has expanded into the basement of the MPI building. As with many institutes, visitors are permitted use of the university mathematics library, which in the case of the University of Bonn is excellent (though budget cuts have in recent years diminished its quality).

The MPI has quite good computing facilities. Zagier is a prodigious calculator, and it was his love of computing that led the MPI early on to purchase computers. Today it has a network of Unix workstations accessible in offices and in some public areas. Some visitors have found the rules of the computing administration at the MPI rather rigid, with especially specific instructions about how computer accounts must be organized and how the computers can be used. On the other hand, the MPI administration says the institute has received many comments about how helpful and flexible their computer administrators are. There are also other aspects of MPI operations that some visitors have felt are too restrictive, such as the rules governing telephone use, which have caused many to head, phone card in hand, for the one pay phone in the MPI building.

When it comes to visitor housing, the MPI does not have an easy job. Unlike, for example, the IAS, which has its own on-campus housing, the MPI must rely on a network of rental properties around Bonn. The quality of apartments is uneven, with some visitors being placed in somewhat rundown but well located apartments and others assigned to apartments in Tannenbusch, a set of highrises far from the institute. The city of Bonn is quite safe, though some visitors have found it dull and the citizens less than hospitable. Some appreciate the peacefulness of Beuel, the section of town that is home to the MPI's current building. The location of the MPI's new building, on a bustling central square in Bonn, will be livelier though less serene.

MPI Finds a New Home

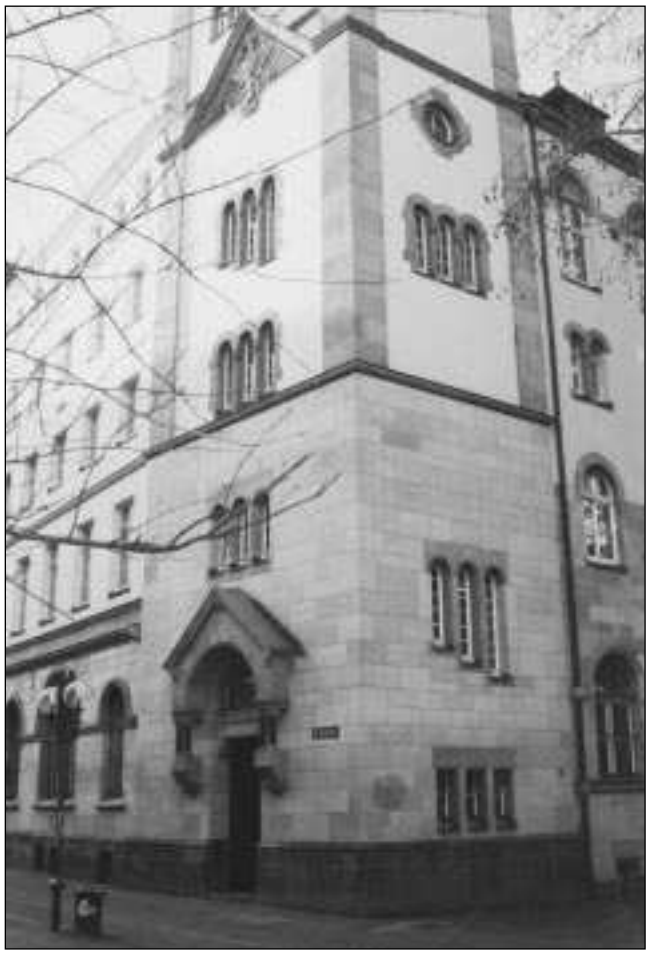
Don Zagier served as managing director of the MPI from Hirzebruch's retirement in 1995 to late 1997 (currently Gerd Faltings is the managing director). One of Zagier's main goals was to secure a new building for the MPI. Asked about this effort, Zagier laughs, "That was a big battle!" He cannot conceal his glee over the outcome: quarters that are larger, more centrally located, and closer to the University of Bonn. And although the MPI does not wish to advertise the fact, their new home is an elegant listed building in the center of town, with the words "Postamt" running in gilt letters across

the facade (it used to be a post office), a wrought iron balcony, and a bas-relief set into a central pediment.

When the MPI started in 1982, many different buildings were considered. In his 1985 *Intelligencer* article on the MPI, Norbert Schappacher commented that, among the possible homes for the MPI, "a Los Angeles like project of having the institute riding on a bridge across a freeway has already been turned down." Nothing suitable could be found close to the university, so the MPI chose the building on Gottfried-Claren-Strasse, which was ideal in other ways and which had a reasonable rent. As the MPI grew, the building became more and more crowded. So many people have had to share offices that it just became "ridiculous," says Zagier. "You can't do this like a youth hostel." At one point the space became physically smaller when the owners of the building needed to use one wing, forcing the library into the larger of the two lecture rooms. As the administrative staff grew, some had to relocate to a separate building about a quarter of a mile away.

Seven or eight years ago the MPI appealed to the Max Planck Society for additional money to rent a larger building. The MPG turned down the request because, with the reunification of Germany, it was concentrating its efforts on the eastern part of the country.[3] Still, the MPG agreed that the Bonn institute needed a new building and suggested that it raise the issue again in about five years, when the situation in eastern Germany would presumably have settled. But during that period Germany entered a recession, and the MPG was forced to cut back. The pressure has been so severe that it recently closed four Max Planck Institutes, purely for financial reasons. "They sometimes closed one because it was considered that it was no longer doing enough good scientific work," Zagier notes. "But they never before closed one because they ran out of money." It was not an auspicious time to ask the MPG for more money for a new building.

Coincidentally, it was the political situation that opened the door on negotiations for a new building. In 1995 the MPG offered the MPI a couple of floors in a skyscraper that had been vacated because of the moving of Germany's capital from Bonn to Berlin. The move has become a politically sensitive issue in Bonn. The hope was that getting prestigious organizations like the MPI to move into the vacant buildings would lessen the loss in property values. But the particular building suggested by the MPG was not suitable. "You couldn't imagine a worse place for a math institute," says



Entrance to the new Max Planck Institute building.

Zagier. "It was very fancy, of course, but extremely cold, with huge rooms and long corridors," rather than areas in which people can circulate and gather together to talk. This episode had one bright spot: the MPG's offer meant that it agreed in principle to finding a better home for the MPI (the government building would have been triple the rent on Gottfried-Claren-Strasse). So over the course of the ensuing two years Zagier and the other scientific members looked at about thirty buildings in Bonn, aiming to find a handful to propose to the MPG.

All along they were searching for rented quarters; the MPG's budget prohibited the construction of a new building. At one point the University of Bonn offered a plot of land to the MPI on very good terms, and a sponsor was found to construct a building that would be rented to the Institute. While the location was excellent, there were other problems: the plot of land was too small, and the rent would have been too high. In the end three or four existing buildings were proposed to the MPG, one of them being the old post office in a central square in Bonn called the Münsterplatz. The post office was the best choice in many respects, including location, size, and proximity to the university, and it was not the most expensive. Never-

[3] *For example, the MPG established the Max Planck Institute for Mathematics in the Sciences in Leipzig, which began operations in October 1996; see "A New Max-Planck Institute for Mathematics in the Sciences in Leipzig", by Jürgen Jost, Stefan Müller, and Eberhard Zeidler,* Notices, *November 1996, pages 1125–1126.*

theless, the beauty of the building made it a tough sell: Could the MPG, so strapped for money it was closing institutes, be seen renting such fine quarters for the mathematicians?

At one point the negotiations reached an impasse, but Zagier persisted, and he and Faltings flew to Munich to discuss the matter with MPG officials. There was no disagreement that the Institute needed a new building; the problem was the pressure on the MPG's funds. "All of the Max Planck Institutes have come up with very good projects, and many of them have stories about how rough life is," Zagier explains. "So we had to convince them that our life is rougher. And in the end most anybody who has visited this institute now agrees that although we are doing okay, we really are living in a shoebox." He says that one of his most persuasive arguments was that the MPG was actually getting a poor return on its money with the present building. If the visitors are too crowded in their offices, they find they cannot work, so they give up on coming into the Institute and work at home instead. "And if people are working at home, you might as well not have a Max Planck Institute," says Zagier. "The whole idea is that we bring people together and they work together.... But it only happens if people actually use their offices." In the end the trip to Munich paid off: the MPG agreed in principle to let the MPI rent the postal building, and two or three months later they got the final okay.

If the MPI's new home seems to have a noble flourish, that is because it was at one time a palace, the Fürstenberg Palais, home of canon Radermacher of the cathedral chapter and later in the 19th century of the noble family Fürstenberg-Stammheim. It was built in 1798, and greatly expanded in 1926, when it was converted into the main post office. The building features in many postcards from Bonn, for it stands just behind a famed, larger-than-life statue of Beethoven (who was born in Bonn). In 1845 Queen Victoria stood on the balcony of the Fürstenberg Palais during the inauguration of the statue.

Present plans call for the MPI to move into the new building in November of this year. The building is in a U-shape, and the "U" will be closed up to form a courtyard in the center. There will be a subterranean level of shops and restaurants. The MPI will occupy the third, fourth, and fifth floors of the building, together with the second floor that faces the Münsterplatz. The MPI entrance will not be on the square, but around the corner on a side street. One of the biggest problems with the old MPI building is the lack of a good lecture hall. After the larger of the two seminar rooms was taken over by the library, the MPI was left with one that could seat only thirty-five to forty people, and uncomfortably at that. The new building has an enormous room that once housed 400 telephone switchboard operators; this will be the MPI auditorium. There is also much more room for the library, which will be on two stories, with tables and chairs on the second level. The architects who were designing the interior proposed an efficient, central location for such necessities as the computer room, administrative offices, fax machine, and so on. "We explained we wanted exactly the opposite," says Zagier. The idea is to have the facilities spread out so that visitors have to circulate around the Institute. There will be small niches around the building with blackboards and tables so that it is easy to find places to talk. (These touches bear some resemblance to the Newton Institute, which has blackboards in every conceivable spot and some inconceivable ones, like the restrooms.)

One of the changes that the MPI is looking forward to in the new building is more interaction with mathematicians at the University of Bonn. In addition it is planning two new activities that are made possible by the extra space afforded by the new building. Both aim at improving support for young mathematicians in Europe, who often have difficulty securing permanent, full professor positions. One of these is the European Postdoctoral Institute (EPDI), a joint effort by MPI, IHES, and the Newton Institute. The EPDI provides two years of funding to postdoctoral mathematicians, who then spend one year at one of the three institutes and the second year elsewhere in Europe at a university or research institute or even in industry. The three institutes have started the EPDI on a very small scale and are hoping to secure funding for twenty postdocs a year from the European Union. The other new effort at MPI is called *Nachwuchsgruppen*. These would be small groups of perhaps three people, led by a young person who is several years past the Ph.D. but who has a sufficiently strong research program that he or she could supervise Ph.D. students. While this person would be given a five-year appointment at the MPI, the expectation would be that before that time ran out he or she would secure a permanent job. The other members of the *Nachwuchsgruppe* would be graduate students or postdocs who would work directly with the group leader.

This summer, as the mathematical world turns its attention to Berlin for the ICM, at the other end of Germany the MPI will be in the midst of preparations for its move to the new building in November. With the retirement of Hirzebruch the building has become emblematic of a new era for the MPI. Many would agree with Matthias Kreck, director of the mathematics institute at Oberwolfach, who commented that, with his charming personality and willingness to listen, Hirzebruch "was and is central for the atmosphere at the Max Planck Institute." The challenge for the MPI is to chart a course for the future while retaining the great traditions that have made it one of the world's leading centers for mathematics research.